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# A History of Botanical Exploration in Amazonian Ecuador, 1739–1988

S.S. RENNER

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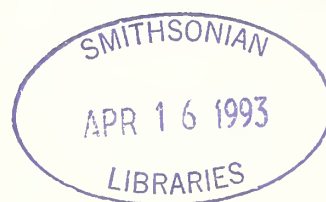
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# A History of Botanical Exploration in Amazonian Ecuador, 1739–1988

*S.S. Renner*



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## ABSTRACT

Renner, S.S. A History of Botanical Exploration in Amazonian Ecuador, 1739–1988. *Smithsonian Contributions to Botany*, number 82, 39 pages, 1 map, 1993.—Information is provided on all individuals known to have collected botanical specimens in the eastern Ecuadorean lowlands below 600 m altitude from 1739 until 30 May 1988. This area belongs to the provinces Sucumbíos, Napo, Pastaza, Morona-Santiago, and Zamora-Chinchipe and covers about 71,000 km<sup>2</sup>. Besides biographical data, are included collecting dates and localities, herbaria containing the specimens, and pertinent references to publications by the collector, or about the collector or the expedition. The data are arranged alphabetically by collector, including cross references between main and secondary collectors. Altogether 205 collectors are treated. The total number of specimens gathered in the eastern Ecuadorean lowlands (excluding duplicates, including bryophytes and fungi) is around 61,000, i.e., about 86 per 100 km<sup>2</sup>, representing an estimated 4000 species of vascular plants. An index to localities and a map provide general information on the main collecting regions.

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# A History of Botanical Exploration in Amazonian Ecuador, 1739–1988

*S.S. Renner*

## Introduction

In proportion to its area Ecuador is the floristically richest country in South America. This botanical wealth is undoubtedly due to the diverse ecological conditions created by the Andes, rising in Ecuador from sea level to nearly 6300 m altitude. The country accordingly has attracted the interest of numerous naturalists, many of whom crossed Ecuador on their way from Bogotá to Lima or visited various parts of South America, including Guayaquil. Among the earliest were La Condamine and Joseph de Jussieu (1740s), Née (a naturalist on the Malaspina expedition, visiting Guayaquil in October 1790 (Madulid, 1989)), Tafalla (collecting near Guayaquil around 1800), Humboldt and Bonpland (1802), Barclay and Hinds (resident botanists on H.M.S. *Sulphur* collecting in Ecuador in 1836 and 1838), Hartweg (itinerary: Bentham, 1839), Lehmann, Lobb (biography: Ewan, 1973), and André (itinerary: Smith, 1965), to name but a few. Darwin during his visit to the Galápagos Archipelago in 1835 collected numerous animals and also 209 plants (Wiggins and Porter, 1971). However, except for La Condamine and possibly Jussieu, all early exploration was confined to the coastal area and the western Andes.

The botanical exploration of the much less visited eastern lowlands from the time of Condamine and Jussieu until May 1988 forms the subject of the present work. Until a future publication on the collecting history of the entire country, this compilation may be useful in itself; at the same time it may serve as a basis for further investigations. To make this paper more generally useful I have prepared an index to the localities where plants have been collected and have cited relevant ethnobotanical and phytochemical literature or, occasionally, semi-popular travel accounts in addition to technical papers describing new species based on an author's collections. The work of foresters, phytochemists, entomologists, ornitholo-

gists, or anthropologists sometimes involves making herbarium collections and their material, though usually not widely distributed, is often interesting for its associated data and for otherwise unvisited localities. An effort has therefore been made to include all such work. In a few cases some information is also given on a collector's activities immediately outside the eastern Ecuadorean lowlands, particularly when itineraries were contained in letters to me or were extracted from diverse published sources. The editors of the *Flora of Ecuador*, G. Harling and B. Sparre (volumes 1–24, until 1986) and G. Harling and L. Andersson (from volume 25 onward), from the start have encouraged the complete citation of a relatively large number of specimens, and an impression of who collected where and when in Ecuador may therefore be gained simply by going through the published volumes (1–39); I have reconstructed from cited specimens the itineraries of some important collectors like Spruce, Jameson, Isern, Rimbach, and Bénoist.

The eastern lowlands of Ecuador are herein defined as the area east of the Andes that lies below 600 m altitude (Map 1), comprising a surface of about 71,000 km<sup>2</sup>. Politically these lowlands belong to the provinces Napo, Pastaza, Morona-Santiago, and Zamora-Chinchipec. (In January 1989 the Province of Napo was subdivided, with the southern portion retaining the name Napo. The northern part, comprising the cantones Gonzalo Pizarro, Lago Agrio, Shushufindi, Putumayo, and Sucumbíos, now forms the Province Sucumbíos, with Lago Agrio as its capital. Most of this history was prepared before that change, and all references to Napo refer to the province in its former boundaries.) In Ecuador the area east of the Andes is commonly referred to as "Oriente," which, however, officially is thought of as including all land up to 2000 m altitude and as comprising a surface of 134,760 km<sup>2</sup>. Administrators also sometimes define the lowlands as the area lying below 300 m altitude because fluvial transport stops at about that altitude. The 600 m contour line used herein to delimit Oriente has the advantage of appearing as a reasonable floristic delimitation since many species reach distributional limits at this elevation. Oriente has a population density of

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FIGURE 1.—Map of eastern Ecuador, including regions of particular botanical collecting.

between 2 and 3 inhabitants per km<sup>2</sup>, including several relatively (!) large indigenous groups (see below, "Ethnobotanical Collecting").

Since La Condamine's times the boundaries between Ecuador, Colombia, and Peru have changed; some stretches are still in contention. Until the 1820s the Presidency of Quito (La

Provincia, or Real Audiencia, de Quito) was officially part of the Viceroyalties of New Granada and Peru. From 1821–1830 Ecuador belonged to Gran Colombia, forming three Departments, the Dpto. de Guayaquil, the Dpto. del Ecuador, and the Dpto. de Azuay, the last comprising the entire area east of the Andes to the Marañón. After the separation from Colombia and



until the war with Peru in 1941, the Marañón (to its confluence with the Pastaza) remained the official southeastern Ecuadorean border. The origin of early collections from "Peruvia," "Loxam Novogranatensium," "Peruvia pastoensis," "collibus siccis Peruviae," or "Loja peruvianorum" obviously has to be determined in the context of the maps the respective collector is likely to have used. (Several useful reproductions of old maps may be found in the seven volume *Historia del Ecuador*, edited by J.S. Lara, 1981–1982).

By far the most convenient fluvial route to the southeastern province of Maynas was (is) the Río Bobonaza. From Baños one traveled to Canelos where a Dominican mission had been established in 1581 and from there one continued down the Bobonaza (220 km) to the Pastaza on which one reached the Marañón, having passed Andoas. A more southern route down the Río Chinchipe to the Marañón was taken by La Condamine. To reach the northern parts of the Amazonian lowlands the route Ambato–Baños–Mera–Puyo to Puerto Napo could be used, from where one traveled down the Río Napo to Coca (Puerto Francisco de Orellana), passing Ahuano and Santa Rosa. Until the advent of petroleum exploration there were hardly 300 km of gravel roads reaching more or less far into the eastern lowlands and they were usually passable only in the dry season: the road from Quito ending at Baeza (99 km); the Ambato–Puerto Misahuallí road (175 km); the Cuenca–Limón road (91 km); and the road across the Loja–Zamora pass (60 km) leading down to 1000 m altitude and the headwaters of the Río Zamora. Wallace, in a footnote to Spruce's (1908:209) account of his travels in Ecuador during the years 1857–1863, still asserted, "There is, in fact, not a single road in Ecuador."

**ACKNOWLEDGMENTS.**—This paper originated as a by-product of taxonomic work for the *Flora of Ecuador* and a checklist of eastern Ecuadorean flowering plants. I thank the curators of F, GB, MO, NY, QCA, S, SEL, and US for permission to consult specimens and also the numerous individuals who answered letters asking for information on their collecting. Special thanks are due to L. Andersson, L. Besse, S. Churchill, L. Dorr, G. Harling, E. Heinrichs, E.L. Little, Jr., D. Neill, B. Ståhl, H. Balslev, J. Ewan, and J. Wurdack. Financial support to visit herbaria in Sweden, Ecuador, and the United States came from the Danish Natural Sciences Research Council and the Marie Selby Botanical Gardens (through a Visiting Scientist position). Letters received in connection with the current project are in my personal file and might be made available. I am grateful for all corrections and additions to the "List of Collectors."

### Chronology of Botanical Exploration

In this section I give a brief resumé of the main phases of botanical exploration in eastern Ecuador. Apart from general works covering the zoological and botanical exploration of South America (e.g., Horn and Kahle, 1936; Pennell, 1945; Maguire, 1958; Papavero, 1971, 1973), there are two published

sources for the history of collecting in Ecuador: Diels' (1937) very useful list of collectors up to 1936 and a booklet by Acosta-Solís (1968). Wurdack (1964) discussed the botanical exploration of the Pongo de Manseriche region of the upper Marañón, and there are published biographical notes on a few of the early collectors like Spruce, Mexía, and Camp.

The first naturalists to visit the eastern lowlands were the French botanist Joseph de Jussieu (1704–1779) and the geographer and naturalist Charles Marie de la Condamine (1701–1774). La Condamine, descending the Río Chinchipe, reached Jaén de Bracamoros in June 1743. From there he continued after a four-day walk to the port of Chuchunga (near the present-day town of Nazaret) on the Marañón to Borja, the capital of Maynas, and thence to the mouth of the Amazon, which he reached on the 27th of September (Wurdack, 1964; Latorre, 1988, reproduces Condamine's map and discusses its cartographic significance). Whereas la Condamine made no botanical collections, his compatriot Jussieu, like so many others in Ecuador on the quest for quinine, already in 1739 visited Loja to gather specimens that eventually found their way to Paris, where Alexander von Humboldt compared them with his own plants from the same locality (Steele, 1964). Most of Jussieu's plants are from higher elevations but at least some seem to stem from lower slopes of the Río Zamora valley.

Almost 60 years later, in August 1802, Humboldt and Bonpland, coming across the Andes from Chontalí, also reached the Río Chinchipe near its junction with the Marañón. During 17 days Bonpland collected plants near Rentema before they continued to Jaén (Wurdack, 1964; Sandwith, 1968).

The next to reach Ecuadorean Amazonia were Gaetano Osculati, William Jameson, and Richard Spruce. Osculati, an Italian naturalist traveling the world to collect insects, in 1847 decided to follow the Río Napo from its sources to its junction with the Amazon and thence on to Belém. He arrived in Belém in March 1848. (Dates for his stays in Puerto Napo, Ahuano, Santa Rosa, and Coca are given by Papavero, 1973:343–347.) According to Steere (1948b) Osculati collected a few mosses near Puerto Napo, where he had stayed at the house of Manuel Villavicencio, another avid insect and bird collector. Jameson, a Scot, was Professor of Chemistry and Botany at the Universidad Central in Quito from 1826 until 1873. From January to May 1857 he traveled to Tena, Archidona, Puerto Napo, Ahuano, Santa Rosa and back again (Jameson, 1858) but relatively few collections were made during that trip. In the same year Richard Spruce, coming up the Río Bobonaza from Peru, reached Canelos, from where he continued over land to Baños. Spruce collected a large number of mosses and hepatics near Pucayacu, just south of Canelos (Spruce, 1908:102–163), and he considered the Montaña de Canelos from the middle of the course of the Bobonaza to the upper Pastaza valley at about 1800 m altitude "the richest cryptogamic locality on the surface of the globe" (1908:164–166). However, "the circumstances under which I traveled prevented me paying any attention to the phanerogamous plants nor did I throughout the journey see any large tree in flower, save two or three times a species of

Laurel." Just behind Canelos Spruce was forced to throw away the trunk with drying paper brought from Tarapoto, and on the way from Canelos to Baños he "could bring no plants along save a few mosses" (1908:205). A single specimen from the Río Bobonaza "s.n." at Kew is cited in the *Flora of Ecuador* (13:375).

Eight years later, from May to July 1865, the Spaniard Juan Isern y Battló, a member of the Comisión Científica del Pacífico (cf. Miller, 1968, which includes a map showing the South American phase of this extraordinary expedition), visited Archidona, Puerto Napo, and the slopes of the Volcán Sumaco, then continued down the Río Napo to Coca. Isern's plants were first studied by José Cuatrecasas (1935) who also researched Isern's itinerary. At least 500 numbers were collected in the lowlands.

Luigi or, in the Spanish form, Luis Sodiro (1836–1909), an Italian Jesuit and like Jameson Professor of Botany at the Universidad Central, is best known for his publications on the vegetation of Ecuador and on pteridophytes, *Anthurium*, and *Piper*. Though he collected extensively he apparently never reached the eastern lowlands (Stafleu and Cowan, 1976–1988; Nicolson, 1983; Croat, 1988).

Several professional plant hunters, among them R. Pearce and G. Wallis working for the Veitch Tropical Nurseries of Exeter, came to Ecuador to find plants suited for horticulture. Richard Pearce collected in the Cuenca vicinity in 1862, Gustav Wallis along the banks of the Río Zamora in 1876 or 1877. Wallis took mainly orchids and a few other beautiful plants like the melastome *Monolena primulaeflora*, described from a cultivated specimen he provided. Another professional plant collector, Hugo Poortman, working for E.F. André, seems to have collected in the same area in 1882. It is unclear how far into the eastern lowlands any of these men came.

In 1894 the German expatriate August Rimbach, professor at the university in Cuenca, and his brother Karl descended the Río Bobonaza to the Pastaza (Rimbach, 1897; Diels, 1937). They thus made the exact return journey of Spruce, but seem to have had better weather (cf. Wallace's comment in Spruce, 1908:135). Though Rimbach made at least 800 collections in Ecuador (distributed to many herbaria), only one specimen from the Río Pastaza is cited in the *Flora of Ecuador* so far.

In the twenties and thirties the botanical exploration of eastern Ecuador became slightly more intensive. Carlo Crespi, an Italian Salesian missionary, in 1924 collected ferns in the vicinity of Indanza down to elevations around 600 meters, and the French botanist Raymond Benoist, like several of the other early botanical explorers Professor at the Universidad Central, collected at least 650 numbers near Puerto Napo in 1931. In March and April 1935, the then 64-year-old American Ynés Mexía visited Canelos on the Río Bobonaza and Puerto Napo, Tena, and Archidona in the Napo valley. From her Ecuadorean travels she brought back almost 2000 numbers, some 400 of them from the eastern lowlands. Simultaneously with Mexía, another woman, the 25-year-old gardener Erica Heinrichs

collected for the Botanic Garden of Berlin-Dahlem near Archidona, Tena, and Nuevo Rocafuerte on the lower Napo river, near Canelos and Sarayacu on the Bobonaza, and in the vicinity of Méndez and Macas in Morona-Santiago. Heinrichs stayed in Ecuador from 1932 to 1935, collecting 1000 numbers, usually with 12 duplicates; 245 of her collections were made in lowland Oriente. Also active during the 1930s were Arnold and Hertha Schultze-Rhnhof, an independent couple who during five years collected insects and plants in various parts of Ecuador, including the environs of Mera, Puyo, and Canelos. (They also visited the coastal plain and the northern Ecuadorean Andes near the Colombian border, but probably no specimens survive.) The Botanic Garden of Berlin-Dahlem received a total of 1497 numbers collected by the Schultze-Rhnhofs, and at least some of this material has been saved; however, of the six sheets cited in the *Flora of Ecuador* (volumes 1–39) only two are extant (and housed in Berlin).

Towards the end of the Second World War the U.S. Government organized surveys for high-quality sources of quinine, rubber, and timber in Colombia, Ecuador, and Peru (Pennell, 1945; Steere, 1945a–c; Hodge 1948; Acosta-Solís, 1951). To Ecuador came the botanists W.H. Camp, W.C. Steere, L.R. Holdridge, E.L. Little, F.M. Ownbey, G.W. Prescott, W.B. Drew, I.L. Wiggins, and J.A. Steyermark, and the ornithologist A. Skutch, among others. An Ecuadorean collaborator of the Cinchona mission was M. Acosta-Solís. Working until September 1945 (Balslev and Joyal, 1980) Wendell Holmes Camp and his assistants also made important collections in the lowlands, but because of Camp's special interest in the Ericaceae, the vast majority of their material was gathered at higher altitudes. Among the most interesting plants of Camp's team are those collected on the lower ridges of the Cutucú mountain range. The Cutucú area was later (in 1975) also visited by Elbert Little and his Ecuadorean collaborators Alberto Ortega, Alfredo Samaniego, and Francisco Vivar, who concentrated on the trees of the area. Another botanist from the New York Botanical Garden, William C. Steere (1907–1989), during his first visit developed a life-long special interest in Ecuadorean mosses (Steere, 1948b). A comprehensive annotated catalog, including his personal collections from Ecuador, is in press.

The foundation for the important contributions made by Scandinavian botanists to the exploration of Ecuador was laid by Nils Johan Andersson (collecting mostly in western Ecuador in 1852), Gustav Lagerheim (professor at the Universidad Central from 1889–1892, collections mostly near Quito), and I. Holmgren and O. Heilborn (1919–1921, mostly in the Andes). The farthest east Holmgren and Heilborn collected was along the Río Verde near Baños. In the fall of 1939 another Swede, Erik Asplund, worked in the vicinity of Tena and Archidona and though relatively few of his collections were made below 600 m altitude, his material is important in the context of floristic knowledge of the Oriente because of its outstanding quality. As his assistant, Asplund employed a citizen of Mera,



Manuel Lugo, who had already been working for the Schulze-Rhonhofs. Subsequently, Manuel Lugo also worked for Gunnar Harling, and he and his son Hólguer collected a total of over 6000 numbers, mainly trees from the Oriente.

Gunnar Harling, then at the University of Stockholm, came to Ecuador towards the end of 1946 as member of a Finnish-Swedish Ethnographical expedition. This was headed by Rafael Karsten who, however, soon left, leaving Harling in charge. Harling returned to the Oriente in 1958–1959 and was one of the first botanists to collect along the Río Napo down to Coca almost 100 years after Isern. After having moved to the University of Göteborg in 1963, he and B. Sparre from Stockholm began to make plans for a *Flora of Ecuador*. During a preparatory phase from 1968 on collaborators were found and an international editorial board established; the first volume appeared in 1973 (Harling, 1973). In Ecuador, Harling employed the Lugos as resident collectors and in Sweden he was instrumental in involving collaborators and students in the *Flora of Ecuador* project. Another early Swedish expedition was that of Folke Fagerlind and his student Per-Göran Wibom from the University of Stockholm, who collected near Puyo and Mera and on the lower Río Napo between Tiputini and Lagartococha in 1952–1953.

Oil exploration in eastern Ecuador started in the 1940s and led to the gradual establishment of airstrips, roads, and other installations during the 1950s and early 1960s. When oil was finally discovered in Lago Agrio some 38 km from the Colombian border on 3 March 1967, large-scale exploration began and botanical exploration boomed; of the 118 main collectors almost 100 came after 1960. In 1968, L. Holm-Nielsen and S. Jeppesen, from the Botanical Institute of Aarhus University, conducted the first expedition to Ecuador by Danish botanists, collecting extensively also in eastern Ecuador (Holm-Nielsen and Jeppesen, 1968). Holm-Nielsen returned to Ecuador in 1973 (with S. Jeppesen, B. Løjtnant, and B. Øllgaard) and was professor at the Pontificia Universidad Católica in Quito from 1979–1981, during which period he organized several expeditions to the Oriente with his students J. Jaramillo, F. Coello, R. Alarcón, R. Andrade, E. Azanza, and J. Brandbyge. The collaboration between the Botanical Institute in Aarhus and the P. Universidad Católica continued. Holm-Nielsen was followed by H. Balslev (1981–1984), S. Laegaard (1984–1986), B.B. Larsen (1985–1986), P.M. Jørgensen (1986–1989), H. Borgtoft Pedersen (1989–1990), and B. Øllgaard (1990–) as professors of botany at the Universidad Católica, and numerous Ecuadorean and Danish students became involved in floristic and vegetation-analytical work, with eastern Ecuador being the main focus of attention. Particularly J. Brandbyge and E. Azanza brought back interesting collections from remote areas (see Table 1; at this writing AAU holds 92,000 specimens from the entire country).

From 1970 to 1972 Bruce MacBryde was resident collector for the Missouri Botanical Garden in Ecuador and the ~1500 collections deposited by him and his Ecuadorean wife

TABLE 1.—Collections of more than 300 numbers in lowland eastern Ecuador. Note that Spruce's cryptogams from the Río Bobonaza are not included here.

| Collectors             | Number                 |
|------------------------|------------------------|
| Asplund                | ~400                   |
| Baker, M.              | 1800                   |
| Balslev et al.         | 1890                   |
| Benoist                | ~650                   |
| Bohlin and Bohlin      | 862                    |
| Brandbyge et al.       | 4265                   |
| Cazalet and Pennington | 350                    |
| Cerón et al.           | 5000                   |
| Davis and Yost         | 370                    |
| Foster                 | 329                    |
| Gentry et al.          | ~1400                  |
| Grubb et al.           | ~3000 (mostly sterile) |
| Harling et al.         | 1947                   |
| Holm-Nielsen et al.    | 3044                   |
| Irvine                 | 1147                   |
| Isern                  | ~500                   |
| Jaramillo et al.       | 1749                   |
| Korning and Thomsen    | 822                    |
| Lawesson et al.        | 1081                   |
| Laessøe                | 938                    |
| Laegaard               | 564                    |
| Løjtnant and Molau     | 307                    |
| Lugo S., H.            | 5296                   |
| Luteyn et al.          | 470                    |
| Macbryde et al.        | ~1000                  |
| Mexía                  | 400                    |
| Miller et al.          | 410                    |
| Mowbray                | ~600                   |
| Neill et al.           | 3550                   |
| Øllgaard et al.        | 1696                   |
| Palacios et al.        | 3800                   |
| Pinkley                | ~550                   |
| Sparre                 | 604                    |
| Valencia et al.        | 1615                   |
| Wiehler                | 488                    |
| Zaruma et al.          | 800                    |

Olga, professor of botany at the Universidad Católica, became the foundation of the Catholic University's modern herbarium. Important collectors associated with this herbarium are Jaime Jaramillo and Flavio Coello (cf. Table 1). MacBryde himself collected widely in the Oriente, but especially near Santa Cecilia (Napo) and in Morona-Santiago and Zamora-Chinchipe, areas to which he went repeatedly also with amateur orchid collectors.

A new type of floristic research work began in the 1960s, namely quantitative ecological inventories, involving the enumeration of every tree (usually) of a limited area regardless of its phenological stage, the measurement of several parameters of these trees, and the analysis of species abundance and distribution. In the Oriente this method was first used by Grubb, Lloyd, Pennington, and Whitmore during an expedition of the Oxford University Exploration Club in 1960 (Emerson, 1960) on which they collected about 3000 plants, most of them sterile. They used a multidisciplinary approach, supplying

forest transects of the kind commonly done by foresters with microclimatological measurements and soil analyses (Grubb et al., 1963; Grubb and Whitmore, 1966, 1967). An example of "classic inventory work" by foresters is the 1975 survey of the timber resources of southeastern Oriente carried out by Little and collaborators. A biological inventory combined with autecological studies was also carried out by a University of Kansas team that in 1972 set up a quadrat near Santa Cecilia (botanical and herpetological studies by MacBryde, Dwyer, and Simmons; cf. Duellman, 1978). From 1982 to 1984 the New York Botanical Garden, the Pontificia Universidad Católica, and the Botanical Institute of Aarhus University jointly carried out an inventory project at Añangu in the northwestern corner of the Yasuní National Park (Balslev et al., 1987; see also the entry "SEF project" in the list of collectors), and in 1988 the Universidad Católica and the Aarhus Botanical Institute began a new project, again using the inventory approach, which includes the floristic and physiognomic analysis of the entire vascular flora of a hectare near the University's Cuyabeno station.

Since 1985 David Neill of the Missouri Botanical Garden, St. Louis, under contract with the U.S. Agency for International Development, and the Dirección Nacional Forestal and his Ecuadorean collaborators, C. Cerón, W. Palacios, J. Zaruma, and recently F. Hurtado, among others, are collecting extensively in the Oriente, concentrating on trees (Neill and Palacios, 1989; cf. Table 1). Neill and G.A. Suárez also founded the biological reserve "Jatun Sacha" near Misahuallí. After the cut-off date for the present compilation, visits to the Napo-Pastaza border (Río Tigüino) by D. Neill and F. Hurtado, to the Cutucú mountains by L. Dorr (New York Botanical Garden), and to the area just south of Cutucú by H. van der Werff (Missouri Botanical Garden) are highlights of the most recent phase of exploration in Oriente.

### The Cryptogamic Flora

The cryptogamic flora of lowland eastern Ecuador is expected to be rather uniform and relatively poor with the exception of groups like ferns, hepatics, epiphyllous lichens, and rust fungi (Buck and Thiers, 1989; Nishida, 1989). However, there clearly is a lack of critical collecting. Spruce's (1884–1885) monumental treatment of the hepatics of the Amazon basin and the Andes is mostly based on his own collections, but as discussed above, in Ecuador these were gathered for the most part on the slopes above 600 meters. Probably the first moss collections in the eastern lowlands were made near Puerto Napo by G. Osculati and M. Villavicencio in 1847 and 1869, respectively (Bartram, 1933; Steere, 1948b; Papavero, 1973), and Steere also mentions collections made in 1909–1910 by the Abbé Michel Allioni, but it is unclear at which altitude. The following modern workers have concentrated on mosses: W.C. Steere (1948b), G. Harling (Crum, 1957), L.B. Holm-Nielsen and students (Robinson et al., 1971,

1977), and S. Churchill and I. Sastre (Churchill et al., in press). Gunnar Harling has collected several hundred leaves with epiphyllous cryptogams, mainly lichens and hepatics (partly reported on by Herzog, 1957), and many of them come from the eastern lowlands. Freire C. Crespi, S. Roth, and B. Øllgaard have concentrated on ferns and lycopods (Øllgaard, 1979), and L. Arvidsson, D. Nilsson, and M. Lindström have focussed on lichens (Arvidsson, 1986; mainly through the efforts of Arvidsson and his students, GB houses about 10,000 numbers of Ecuadorean lichens). Prescott seems to be the only professional phycologist to have made collections in lowland Oriente.

The first mycological collections were made by Richard Spruce. Since then fungi have been collected by T. Laessøe (Laessøe et al., 1989), C. Blaney, and E. Bravo-Velasquez (Bravo-Velasquez and Hedger, 1988), and myxomycetes by G. Harling (Herzog, 1952; Arnell, 1962; Harling, 1967), U. Eliasson (Farr et al., 1979), and F. Schinner (Schinner, 1981).

General collections often include at least some lower plants; for example, P. Grubb and his collaborators during the Oxford University Expedition collected 170 numbers of bryophytes, and L. Andersson has collected at least 95 lichens, mosses, and fungi in the Oriente below 600 m (and many more above that altitude).

### Ethnobotanical Collecting in Amazonian Ecuador

This section draws attention to studies conducted by anthropologists or ethnobotanists that involved the collections of voucher specimens. These researchers tend to work long periods at remote places and to collect plant parts or life stages not usually collected (roots, bark, saplings, etc.). Labels of their specimens also may carry unusual information, and many ecologically relevant data are contained in doctoral dissertations by ethnographers or ethnobotanists. However, this material is often not widely distributed, and it may therefore be necessary to request it from the researcher's home institution (see "List of Collectors").

Of the native groups living in Amazonian Ecuador, the largest are the lowland Quichua or Yumbos (~25,000) whose use of plants has been studied by Alarcón (1988), Holm-Nielsen, Balslev, and students (Kvist and Holm-Nielsen, 1987, and unpublished), Irvine (1987), van Asdall (1983), Marles and Neill (Marles et al., 1988), and Shemluck (unpublished). The botany of the Ecuadorean Jivaroan tribes or dialect groups, i.e., the Jívaro, often referred to as Jíbaro or Shuar, and Achuar, some 10,000 and 5,000 people, respectively, has been studied by Karsten (1935, but see Harner, 1972), Crespi, Cazalet, and Pennington (Pennington et al., 1962), Baker and Lowell, and Villegas (unpublished). The Cofán, who belong to the Chibcha language group and comprise about 500 members, have been studied ethnobotanically by Schultes (numerous publications), Pinkley (1969a, 1973), and Cerón (1987), and the use of plants by the Siona-Secoya who speak a western Tukano language



and number about 700 people has been studied by Vickers and Plowman (1984), Vickers (1976, 1989), Brandbyge and Azanza (1982), and Lescure, Balslev, and Alarcón (Lescure et al., 1987). Finally, the ethnobotany of the Waorani (Huaorani, Auca) who comprise 700 individuals speaking a language related to Zaparo, has been studied by Davis and Yost (1983a,b).

### The Status of the Botanical Inventory of Amazonian Ecuador

At least 196 persons have made collections in the eastern lowlands of Ecuador below 600 m altitude, 125 of them under their own number series. Based on the information obtained (and presented in the "List of Collectors"), I calculated that at least 60,000 numbers have been collected in lowland eastern Ecuador. (Table 1 lists the major collections in terms of numbers of specimens.) The only important collections for which no data on their size have been obtained are those of Acosta-Solís and Spruce (the latter's collection of cryptogams that is; Spruce collected almost no phanerogams along the Río Bobonaza below 600 m altitude). In the lowlands these workers may have made another 1000 collections, which would yield a total of around 61,000 collections of vascular plants, i.e., 86 specimens/100 km<sup>2</sup>. A checklist of the flowering plants of the area lists over 3000 species (Renner et al., 1991) and it is estimated that the eastern lowlands of Ecuador harbor at least 4000 species of vascular plants (Balslev and Renner, 1989).

In a recent source book on the status of the floristic inventory of the tropics (Campbell and Hammond, 1989), Campbell (1989) gave a number of 21 specimens/100 km<sup>2</sup> for Ecuador as a whole based on calculations for which he used the *Index Herbariorum* (Holmgren et al., 1981) figures of herbaria holdings within the borders of tropical-forested countries. These figures are obviously much out-of-date. Campbell (1989), like others, considers that a minimal botanical inventory requires about 100 herbarium specimens/100 km<sup>2</sup> and he regards the number of 50 collections/100 km<sup>2</sup> as the threshold between a well-collected and a poorly collected tropical country. By these standards, Amazonian Ecuador had thus already in 1988 reached the status of a well-collected area. However, modern collecting tends to be centered around a few places like, for example, the biological reserves Cuyabeno, Yasuní, or Jatun Sacha. Yet, recent inventories of these relatively accessible places have resulted in new species and new generic records. Sites known to be rich in endemics, such as the Cutucú mountain range (visited by seven expeditions), continue to yield numerous new taxa and it is abundantly clear that there are immense patches of entirely unknown country between the rivers and roads.

### Annotated List of Collectors

The following annotated list of plant collectors is arranged

alphabetically (with the Danish ø at the beginning of a name treated in the conventional transliteration, Oe) and includes all persons cited on the labels of plants collected in Napo, Pastaza, Morona-Santiago, and Zamora-Chinchipec below 600 m altitude during the period from 1739 to 31 May 1988. The data cited in the list were gathered in two ways: an initial list was assembled from herbarium labels in AAU, GB, QCA, and S. This was supplemented by searching the 39 published volumes of the *Flora of Ecuador* (G. Harling and B. Sparre, editors, 1973–1986, and G. Harling and L. Andersson, editors, 1986–) and further pertinent literature. Letters were then sent to almost all living collectors asking for information on their collecting in Oriente. An attempt was also made to reconstruct itineraries and activities from the labels of collections deposited at AAU, F, GB, MO, NY, QCA, S, and US, as well as from literature.

A distinction has been made between main and secondary (co-)collectors: those names cited in the first place on the label and whose numbering systems were employed on a particular expedition are printed in capitals (main collectors); the names of others cited on the label (secondary or co-collectors) are printed in caps and lower case. In the entries for secondary collectors, the reader is referred to the main collector, whose name is given in capitals, for further information. Some project acronyms and acronyms of Ecuadorean government agencies have been included in the alphabetical listing. Generally, I have closely followed the format of O. Huber and J.J. Wurdack's *History of Botanical Exploration in Territorio Federal Amazonas, Venezuela* (1984). Herbarium acronyms are from Holmgren et al. (1981).

The data provided for each main collector are the following:

Last name, given names.

Year of birth and death; citizenship at actual time of visit to eastern Ecuador; profession (institution with which the collector was associated).

Period of collecting activity in Oriente: itinerary (names of co-collectors).

Numbers of plants collected during specified period; main herbaria where the collections from this period are deposited, with the herbarium housing the collector's own set listed first; if this is not known, herbaria are listed alphabetically.

Notes.

Publications related to the collector's collections from, or activities in eastern Ecuador.

Abalo, José E.

19??– ; Venezuelan; Agronomist, producer of chicken feed, living in Maracay, Venezuela.

Jul 1982: Napo (with G.L. MORALES).

Notes: Amateur collector of *Heliconia*.

Publication: Abalo and Morales, 1983.

ACOSTA-SOLIS, MISAEL

1910– ; Ecuadorean; Botanist (Director del Instituto Ecuatoriano de Ciencia Naturales, Quito).



- Notes: In 1941–1942, Acosta-Solís collected more than 1000 numbers to the east of Riobamba, along the Río Pastaza, and near Puyo almost all above 900 m alt., however, there are at least a few collections from Arajuno; there is a set of this material at F. His more recent collections from Napo (Shushufindi, Coca) and Pastaza (Sarayacu) await distribution (May 1989, in litt.).
- Publications: Acosta-Solís, 1951, 1968.
- Akkermans, Reinier A.W.P.  
1953– ; Dutch; Botany student (Univ. of Utrecht).  
Feb 1980: Napo, Río Aguarico, Cuyabeno (with C.C. BERG and L. Holm-Nielsen).  
Feb–Mar 1980: Napo, Coca (with J. BRANDBYGE and E. Azanza).  
Publications: Akkermans and Berg, 1982; Berg and Akkermans, 1985.
- ALARCÓN GALLEGOS, ROCIO  
196?– ; Ecuadorean; Botany student (Pontificia Univ. Católica, Quito, presently Fundación Natura).  
Aug 1979: Napo, Coca (with L. HOLM-NIELSEN).  
Aug 1979: Napo, Misahuallí (with L. HOLM-NIELSEN and R. Andrade).  
1979–1982: Napo, Misahuallí and Nuevo Rocafuerte.  
212 numbers; QCA.  
1982: Napo, near mouth of Río Yasuní (with H. BALSLEV).  
Notes: Research on the ethnobotany of the Quichua Indians.  
Publications: Alarcón, 1988.
- ANANANCH, LUIS  
19??– ; Ecuadorean.  
Aug 1985: Morona-Santiago, Centro Tuntin Entsa, near Taisha.  
Few numbers; NY.  
Notes: Collecting under a project with the acronym RBAE.
- Anderson, Joe J.  
19??– ; U.S.; Entomology student, presently working for the World Bank in Washington.  
21 Jun–10 Jul 1986: Napo, vicinity of Jatun Sacha, near Misahuallí (with J.S. MILLER).
- Andersson, Lennart  
1948– ; Swedish; Botanist (Dept. of Systematic Botany, Univ. of Göteborg).  
Feb–Apr 1974: Napo; Morona-Santiago (with G. HARLING).  
Itinerary given under HARLING.  
Jan 1977: Napo (with G. HARLING and U. Eliasson).  
Itinerary given under HARLING.  
Feb–Mar 1980: Napo; Pastaza (with G. HARLING).  
Itinerary given under HARLING.  
Apr 1985: Zamora-Chinchi, Zumbi-Paquischa, western slopes of Cordillera del Cóndor (with G. HARLING and M. Hagberg).
- Notes: Specialist on neotropical Marantaceae and Mucaceae; co-editor of *Flora of Ecuador* since 1986 (vol. 25 onwards).
- Publications: Andersson, 1985; Kennedy, Andersson, and Hagberg, 1988.
- ANDRADE, RAMON  
1951– ; Ecuadorean; Botany student (Pontificia Univ. Católica, Quito).  
Aug 1979: Napo, Misahuallí (with L. HOLM-NIELSEN and R. Alarcón).  
Aug 1980: Napo, Río Putumayo.  
Few collections; QCA, AAU.
- Andreasen, Niels Henrik  
1954– ; Danish; Botany student (Botanical Institute, Univ. of Aarhus).  
Jun–Jul 1982: Napo, Añangu (with B. ØLLGAARD, B.B. Larsen, and A.R. Jensen).
- AREVALO, ANIBAL  
19??– ; Ecuadorean; Forester? (Ministerio de Agricultura y Ganadería).  
1975–1976: Napo, Territorio de los Aucas, Lago Agrio (with R.A.A. OLDEMAN, H.G. Oldeman, G.L. Morales, and Lara; in various combinations).  
Nov 1976: Napo, Puerto Quito (with Lara).  
Few collections; QCA.  
Publications: Arevalo et al., 1976.
- ARGÜELLO, ANA  
1961– ; Ecuadorean; Biology student (Pontificia Univ. Católica, Quito).  
1985: Napo, Añangu, Río Payamino.  
1986: Morona-Santiago, Bomboiza.  
Few collections; QCA, AAU.  
Notes: Concentrated on Cyclanthaceae and Arecaceae.
- ARVIDSSON, LARS  
1949– ; Swedish; Botanist (Dept. of Systematic Botany, Univ. of Göteborg, presently at the Natural History Museum in Göteborg).  
1972: Napo, Coca region, Santa Rosa (with D. Nilsson).  
Nos. 579–616; GB, QCA.  
Notes: Concentrated on lichens.  
Publications: Arvidsson, 1986.
- ASPLUND, ERIK  
1888–1974; Swedish; Botanist (Museum of Natural History, Stockholm).  
27 Sep 1939 until at least 6 Jan 1940: Napo, vicinity of Tena and Archidona, occasionally also Puerto Napo (between his nos. 8800–10268, with most from above 600 m alt.); S, some with specialists.  
Nov–Dec 1955, Feb–Mar 1956: Pastaza, Mera and vicinity, Veracruz; from March on in Morona-Santiago near Macas (all above 600 m alt.).  
Notes: Asplund's fieldbooks and notes about his collections, which total 9965 from Ecuador, are archived at S;

they consist entirely of numbers and abbreviations. There are also numerous still undistributed duplicates (nos. 4960–14925; Lundin, in litt., July 1989; Harling, pers. comm., August 1989). The collection localities of Asplund in Ecuador are shown on map 18 in Holm-Nielsen et al., 1984.

#### AZANZA, EDUARDO

1951– ; Ecuadorean; Biology student (Pontificia Univ. Católica, Quito).

Feb–Aug 1980: Napo; Pastaza; Morona-Santiago (mostly with J. BRANDBYGE, partly also with B. ØLLGAARD, S. Roth, and C. Sperling).

Itinerary given under BRANDBYGE.

2–29 Aug 1981: Napo (with J. BRANDBYGE, L. Werling, and S. Leth Nissen).

Itinerary given under BRANDBYGE.

Nov 1982: Napo, Cuyabeno (with A. Barfod).

Few numbers; QCA, AAU.

Jul 1983: Napo, Cuyabeno (with H. BALSLEV and L. Cox).

Publications: Brandbyge and Azanza, 1982.

#### BADILLO, VICTOR M.

1920– ; Venezuelan; Botanist (Herbarium of the Fac. of Agronomy, Universidad Central, Maracay).

1965: Napo, Zarzayacu, 700 m alt.

Nos. 4232–4235; MY (1st set), B, BH, BM, COL, F, G, LOJA, NY, P, RB, SI, U, UC, VEN.

Notes: In Napo, Badillo collected *Jacaratia digitata* and *Carica microcarpa*; in the rest of the country he collected another 62 numbers of Caricaceae.

Publications: Badillo, 1983.

#### BAKER, MARC A.

1953– ; U.S.; Botanist (at the time, New York Botanical Garden, New York).

1985–1986: Morona-Santiago, Bomboiza (with K. Lowell).

1985–1986: Napo, vicinity of Coca and Misahuallí; Pastaza; Morona-Santiago, Taisha (alone or with D. Neill; with W. Palacios; with Trushell; with J. Zaruma).

Nos. 5600–7400; NY, MO, QAME, QCA, and duplicate sets.

Notes: Ethnobotanical research mostly with the Ashuar Indians through the auspices of the Salesian Mission; M.A. Baker made many economic plant vouchers. He participated in the joint project of the Dirección Nacional Forestal, the Missouri Botanical Garden, and the New York Botanical Garden in lowland eastern Ecuador (see entry D. NEILL).

#### Baker, Raymond F.

1945– ; U.S.; Horticulturist (Harold L. Lyon Arboretum, Univ. of Hawaii, Honolulu).

29 Jun–20 Jul 1982: Napo, 50 km W of Lago Agrio; road Lago Agrio to Río San Miguel; vicinity of Santa Cecilia; road Lago Agrio to Coca; vicinity of Coca and

road to Auca oil fields; road Coca to Armenia Vieja; Añangu; vicinity of Lago Agrio; Tena-Pano road and vicinity of Tena; along Tena-Puyo road (with H. KENNEDY and L. BESSE, who both kept fieldbooks; most of Baker's vouchers are BESSE numbers).

Notes: Baker made only live collections, mainly of palms, aroids, and orchids, for which L. Besse and H. Kennedy made the voucher specimens. Accession numbers of the live collections are L-82.1097–L-82.1518.

#### BALSLEV, HENRIK

1951– ; Danish; Botanist (Botanical Institute, Univ. of Aarhus).

Nov 1976: Napo, Coca (with E. Madsen). The expedition is reported on in Øllgaard and Balslev, 1979, and the collection localities are also shown on map 2 in Holm-Nielsen et al., 1984.

Nos. 10578–10656; AAU, QCA.

Jan 1981: Napo, Misahuallí, Tena.

Nos. 1589–1602; NY, QCA.

Apr 1982: Napo, Coca, Río Aguarico, Río Eno, Shushufindi, Añangu.

Nos. 2280–2356; 2383–2425; AAU, QCA.

Jun 1982: Napo, Añangu (with J. LUTEYN, B. Øllgaard, B.B. Larsen, S. Clemants, and J. Boeke).

Jul 1982: Napo, Añangu (with J. LUTEYN, S. Clemants, and J. Boeke).

Aug 1982: Napo, mouth of Río Yasuní (with R. Alarcón).

Nos. 2906–3075; AAU, QCA.

Aug 1982: Napo, Pompeya and along the Río Napo, near Itaya (with Santos Dea).

Nos. 2796–2905; QCA.

Feb 1983: Napo, Añangu (with J. LUTEYN and J. Pipoly).

Mar 1983: Napo, Añangu; Pastaza, Puyo.

Nos. 4262–4270; 4274–4285; NY, QCA.

May 1983: Napo, Cuyabeno.

Nos. 4300–4313; NY, QCA.

Jun 1983: Napo, Coca.

Nos. 4314–4321; NY, QCA.

Jul 1983: Napo, Cuyabeno (with L. Cox and E. Azanza).

Nos. 4322–4376; AAU, QCA.

Aug 1983: Napo, Lago Agrio (with B. Boom).

Nos. 4379–4399; AAU, NY, QCA.

Dec 1983: Napo, San José de Payamino (with D. Irvine).

Nos. 4542–4639; QCA.

Jan 1984: Napo, Cuyabeno (with H. HOPKINS).

Jan 1984: Napo, Cuyabeno.

Nos. 4775–4817; NY, QCA.

Feb 1984: Napo, Río Aguarico.

Nos. 4825–4908; NY, QCA.

Jun–Jul 1985: Napo, Añangu (with A. Barfod and F. Skov).

Nos. 60500–60638; QCA, AAU.

Jul 1985: Morona-Santiago, Río Upano.

Nos. 60649–60650; QCA, AAU.

- Jul–Aug 1985: Napo, Añangu (with A. Barfod and F. Skov).  
Nos. 60679–60755; QCA, AAU.
- Apr 1986: Napo, Añangu, Cuyabeno (with A. Henderson and F. Borchsenius K.).  
Nos. 62031–62050; 62051–62076; QCA, AAU.
- May 1986: Pastaza, Puyo; Morona-Santiago, Taisha.  
Nos. 62080; 62200–62218, and 62401–62417; QCA, AAU.
- Apr 1986: Napo, Añangu.  
Nos. 62219–62400; QCA, AAU.
- Apr 1987: Río Napo.  
Nos. 62465–62484; QCA, AAU.
- May 1987: Napo, Misahuallí.  
Nos. 62498–62505.
- 1 Apr 1988: Napo, Cuyabeno.  
Nos. 69000–69054; QCA, AAU.
- Apr 1988: Napo, Cuyabeno (with R. VALENCIA and K. Bloch).
- Mar–Apr 1989: Napo, Cuyabeno.  
Nos. 84400–84909; QCA, AAU.
- Notes: Specialist on New World Juncaceae and palms.  
Resident botanist and professor at Pontificia Univ. Católica, Quito 1981–1984.
- Publications: Balslev, 1979; Balslev and Joyal, 1980; Balslev and Barfod, 1987; Balslev et al. 1987; Balslev, 1988; Balslev and Renner, 1989.
- Barfod, Anders  
1952–; Danish; Botanist (Botanical Institute, Univ. of Aarhus).
- Nov 1982: Napo, Cuyabeno (with E. AZANZA).
- Jul–Aug 1985: Napo, Añangu (with H. BALSLEV and F. Skov).
- Notes: Concentrating on Anacardiaceae and palms.  
Publications: Barfod, 1987; Balslev and Barfod, 1987.
- Barnett, Lisa Ceryle  
1959–; U.S.; Botanist (New York Botanical Garden, New York).
- Oct 1988: Morona-Santiago, Cutucú, 600–1000 m alt. (with L. J. DORR).
- Notes: Specialist in Sterculiaceae.
- BENOIST, M. RAYMOND  
1881–1970; French; Botanist (Laboratoire de Phanérogamie, Muséum National d'Histoire Naturelle, Paris).
- Apr 1931 until at least Sep 1931: Napo, Puerto Napo, Río Napo.  
Around nos. 4150–4798; P, Q, few duplicates in AAU, S, UC.
- Notes: Taught at the Universidad Central in Quito from 1930 to 1932 and travelled mainly in western Ecuador.  
Publications: Benoist, 1932; Thériot (1936) reported on Benoist's mosses.
- BERG, CORNELIS CHRISTIAAN  
1934–; Dutch; Botanist (Univ. of Utrecht, presently Univ. of Bergen).
- Sep 1977: Napo, near Cosanga and near Baeza, above 600 m alt.
- Feb 1980: Napo, Río Aguarico, Cuyabeno (with R.A.W.P. Akkermans and L. Holm-Nielsen).  
Nos. 1007–1133; AAU, QCA, U.
- Jan 1981: Pastaza, near Puyo, above 600 m alt.; Napo, near Misahuallí; Morona-Santiago, Macas to Indanza.  
Nos. 1200–1236; QCA, U.
- Notes: Specialist on neotropical and African Moraceae, and Cecropiaceae.
- Publications: Berg, 1972, 1981; Berg and Akkermans, 1985.
- BERGMANN, BIRGITTE  
1960–; Danish; Biology student (Botanical Institute, Aarhus University).
- Feb–Apr 1987: Napo, Nuevo Rocafuerte, Laguna Jatuncocha (with H. Borgtoft Pedersen).  
Nos.: 62120–62127; QCA, AAU, and specialist sets.
- Feb–Apr 1987: Napo, Pañacocha (with H. Borgtoft Pedersen).  
Nos. 62128–62140; QCA, AAU, and specialist sets.
- Feb–Apr 1987: Napo, INIAP station at San Carlos (with H. Borgtoft Pedersen).  
Nos. 62163–62166; QCA, AAU, and specialist sets.
- May–Jun 1988: Napo, airstrip of the Conoco oil company, on Río Tivacuno in the Yasuní National Park and near Misahuallí (with S. Laegaard and partly with S.S. Renner).  
Nos. 62592–62599 and 67203–67235; QCA, AAU.
- Notes: Concentrating on palms, especially the genus *Chamaedorea*.
- BESSE, LIBBY (Elizabeth L.)  
1928–; U.S.; Keeper of the Herbarium (Marie Selby Botanical Gardens, Sarasota, Florida).
- 16–19 Jun 1978: Napo, Limoncocha (with M. MADISON and T. Plowman).
- Jan 1979: Napo, Coca, Auca oil field, Río Napo below Puerto Misahuallí (with K. Tan and J.S. Halton).  
Nos. 005–098 at SEL and QCA; 1014–1107 and 1178–1209 at SEL only; specialist sets; the duplicates were renumbered in Quito (series starting with 0) 5–6
- Oct 1981: Morona-Santiago, Sucúa-Macas rd. (with H.E. LUTHER and J.S. Halton).
- 29 Jun–20 Jul 1982: Napo, 50 km W of Lago Agrio, road Lago Agrio to Río San Miguel, vicinity of Santa Cecilia, road Lago Agrio to Coca, vicinity of Coca and road to Auca oil fields, road Coca to Armenia Vieja, Añangu, vicinity of Lago Agrio, Tena-Pano road, and vicinity of Tena, along Tena-Puyo road (with H. KENNEDY, who kept her own fieldbook, and R. Baker).  
Nos. 1529–1632; SEL, MO, QCA, and specialist sets.
- Nov 1983: Napo, Lago Agrio, Coca, Auca oil fields, Río



- Napo at Laguna Taracoa, Río Coca (with J.S. Halton and A. Besse (L. Besse's son)).  
 Nos. 1915–1969; SEL, MO, QCA, and specialist sets.  
 Note: Besse has concentrated on epiphytic families.
- Blaney, Carol  
 1960–; U.S.; Student (Univ. of Indiana, Bloomington).  
 Dec 1988: Napo, Huamaní, Dureno (with A. GENTRY and C. Cerón).  
 Notes: Concentrated on fungi.
- BLICHER-MATHIESEN, ULLA  
 1961–; Danish; Biology student (Botanical Institute, Aarhus University).  
 3–12 Nov 1987: Napo, Añangu, Río Yasuní, Río Payamino (with F. SKOV and F. Borchsenius K.).  
 Nov–Dec 1987: Napo, Cuyabeno, 30 km N of Coca, Coca-Lago Agrio road (with B.B. Klitgaard, who also collected under her own number series); Morona-Santiago, Río Upano.  
 Nos.: 62600–62607; 62608–62610; 62611–62612; 62618–62627; AAU, QCA, and specialist sets.  
 Notes: Concentrating on palms.  
 Publications: Blicher-Mathiesen and Balslev, 1990.
- Bloch, Klaus  
 1963–; Danish; Biology student (Botanical Institute, Univ. of Aarhus).  
 Apr–Jun; Sep–Nov 1988: Napo, Cuyabeno (with R. VALENCIA and H. Balslev).  
 Notes: Bloch, Valencia, and Balslev inventoried the trees larger than 5 cm DBH on a hectare.
- BOEKE, JEF D.  
 1954–; U.S.; Molecular Biologist, on a Thomas J. Watson Foundation fellowship; informally associated with the New York Botanical Garden, presently John Hopkins Univ.  
 Dec 1976: Napo, Cosanga area, mostly above 600 m alt. (with J.B. McElroy).  
 Nos. 342–449; NY, QCA, GH, a good set in AAU.  
 Jun 1982: Napo, Añangu (with J. LUTEYN, B. Øllgaard, B.B. Larsen, H. Balslev, and S. Clemants).  
 Jul 1982: Napo, Añangu (with J. LUTEYN, H. Balslev, and S. Clemants).  
 Notes: Boeke travelled and collected in Colombia, Ecuador, Peru, and Bolivia from September 1976 to August 1977.
- BOHLIN, JAN-ERIC  
 1948–; Swedish; Botanist (Dept. of Systematic Botany, Univ. of Göteborg, presently a system engineer for the Volvo company).  
 Jan 1982: Napo, vicinity of Coca (with G. HARLING, M. Lindström, and S. Roth).  
 May–Aug 1983: Napo, Coca, San José de Payamino, Lago Agrio, Añangu (with M. Bohlin). The collection localities of this expedition are shown on map 14 in Holm-Nielsen et al., 1984.
- Nos. 201–1063; GB.  
 Notes: Specialist on neotropical Nyctaginaceae.  
 Publications: Bohlin, 1988.
- Bohlin, Maria  
 1956–; Swedish; J.-E. Bohlin's wife (Biology teacher).  
 May–Aug 1983: Napo, Coca, San José de Payamino, Lago Agrio, Añangu (with J.-E. BOHLIN).
- Boom, Brian  
 1954–; U.S.; Botanist (New York Botanical Garden, New York).  
 29 May–20 Jun 1982: Napo, Añangu (with J. LUTEYN, S. Mori, B.B. Larsen, and B. Øllgaard).  
 Aug 1983: Napo, Lago Agrio (with H. BALSLEV).  
 Notes: Specialist on neotropical Rubiaceae and Theaceae.
- Borchsenius Kristensen, Finn  
 1959–; Danish; Biology student (Botanical Institute, Univ. of Aarhus).  
 Apr 1986: Napo, Añangu (with H. BALSLEV and A. Henderson).  
 3–12 Nov 1987: Napo, Añangu, Río Yasuní, Río Payamino (with F. SKOV and U. Blicher-Mathiesen).  
 Notes: Concentrated on palms.  
 Publications: Borchsenius and Balslev, 1989; Borchsenius and Olesen, 1990.
- Borgtoft Pedersen, Henrik  
 1959–; Danish; Botany student (Botanical Institute, Univ. of Aarhus).  
 Feb–Apr 1987: Napo, Nueva Rocafuerte, Laguna Jatuncocha Río Napo, Pañacocha, INIAP station at San Carlos (with B. BERGMANN).  
 Notes: Resident botanist and professor at Pontificia Univ. Católica, Quito, 1989–1990.  
 Publications: Borgtoft Pedersen and Balslev, 1990.
- BRANDBYGE, JOHN  
 1953–; Danish; Biology student (Botanical Institute, Aarhus University).  
 Feb 1980: Napo, Río Aguarico, San Pablo de los Secoyas, Río Aguas Negras, Puerto Montúfar, Río Cuyabeno, Río Aguarico, Dureno (with L. HOLM-NIELSEN and J. Jaramillo).  
 Feb–Mar 1980: Napo, Coca, Auca oil fields, Río Payamino, Coca-Lago Agrio rd., San Carlos, Río Napo, Yuca rd., Yuca oil field, Guayusa, Río Coca, between San Carlos and Guamayacu, upstream Río Napo (with E. Azanza and, in the beginning, with R.A.W.P. Akkermans).  
 Nos. 30000–31370; AAU, QCA, MO, GB.  
 31 Mar–8 Apr 1980: Napo, Lago Agrio, along rd. to San Miguel, along rd. Lago Agrio-Coca, Punto Aguarico (with E. Azanza).  
 Nos. 30371–30511; AAU, QCA, MO, GB.  
 12–14 Apr 1980: Napo, Lagunas de Cuyabeno, Puerto Bolívar (with E. Azanza).

- Nos. 30512–30553; A AU, QCA, MO, GB.  
 16 Apr 1980: Napo, San Pablo de los Secoyas (with E. Azanza).  
 Nos. 30554–30570; A AU, QCA, MO, GB.  
 7–9 May 1980: Napo, Río Güepi, path to Puerto Rodríguez at Río Putumayo (with E. Azanza).  
 Nos. 30571–30622).  
 18 May–7 Jun 1980: Pastaza, Lorocachi, Río Curaray, Ceilán, Río Cononaco (J. Jaramillo, F. Coello, and A. Freire (a snake expert from Guayaquil)).  
 Nos. 30623–31807; A AU, QCA, MO, GB.  
 13–29 Jun 1980: Morona-Santiago, Taisha, Río Guambime, Río Panguí, Río Panguientza, Huasaga, Tukupi, Río Pumpuentza at Achuar village (with E. Azanza).  
 Nos. 31808–32433; A AU, QCA, MO, GB.  
 Jul 1980: Morona-Santiago; Pastaza; Napo (with B. ØLLGAARD, E. Azanza, S. Roth, and C. Sperling).  
 5–16 Aug 1980: Napo, San Pablo de los Secoyas, Shushufindi, Río Wai si ayá, a northern tributary of Río Aguarico (with E. Azanza).  
 Nos. 32434–32809; A AU, QCA, MO, GB.  
 2–29 Aug 1981: Napo, San Pablo de los Secoyas, Río Wai si ayá, Río Cuyabeno, Puerto Bolívar, Río Tarapua, Lagunas de Cuyabeno, Río Wai si ayá, San Pablo de los Secoyas (with E. Azanza, L. Werling, and S. Leth-Nissen).  
 Nos. 32947–36242; A AU, QCA, MO, GB.  
 Apr 1983: Napo, Cuyabeno.  
 Nos. 42658–42683; A AU, QCA, MO, GB.  
 Notes: Specialist on neotropical Polygonaceae. Resident botanist and professor at Pontificia Univ. Católica, Quito, 1979–1981, thereafter resident scientist at CESA 1984–1986. Map 5 in Holm-Nielsen et al., 1984, shows Brandbyge's 1980 and 1981 collecting stations. Both expeditions are also reported on in great detail in Brandbyge and Azanza, 1982, which contains maps, locality descriptions, numbers of plants collected at each locality, and an index to all localities visited.  
 Publications: Brandbyge and Azanza, 1982; Brandbyge, 1986, 1989a–c, 1990.
- BRAVO-VELASQUEZ, ELIZABETH**  
 1956–; Ecuadorean; Mycologist (Pontificia Univ. Católica).  
 Sep 1981: Napo, Río Aguarico, Cuyabeno (with P. Gómez).  
 Nos. 75–327; QCA.  
 Notes: Collected mainly ethnobotanical vouchers and trees with wood samples as well as some fungi.  
 Publications: Bravo-Velasquez and Hedger, 1988.
- CAMP, WENDELL HOLMES**  
 1904–1963; U.S.; Biosystematist (New York Botanical Garden, New York).  
 Nov–Dec 1944: Morona-Santiago, valleys of Río Upano and Río Paute, vicinity of Méndez, cordillera NE of Méndez, base of Cutucú.  
 Numbers collected around 600 m: 848–914; 933; 947–948; 1024–1069, 1418–1509, all in the E series; NY (1st set), BM, F, G, GH, K, LA, MO, P, PH, S, U, US, VEN.  
 Notes: The itinerary of Camp and his helpers F. Prieto, M. Giler, and H. Jørgensen has been reconstructed (Balslev and Joyal, 1980; Joyal, 1987).  
 Publications: Several papers are cited in Balslev and Joyal (1980); particularly useful is Camp, 1952, which includes a map of collecting sites.
- Campuzano, Gonzalo**  
 19??–; Ecuadorean; Forester (Ministerio de Agricultura y Ganadería, Quito).  
 1–7 Aug 1975: Napo, Lago Agrio, Río Aguarico, Shushufindi, Tarapoa (with E.L. LITTLE).  
**CAZALET, PETER C.D.**  
 1940–; English; Soil chemist, geographer.  
 Oct 1961–Feb 1962: Morona-Santiago, Taisha (with T.D. Pennington).  
 Around nos. 7515–7765 (350 numbers in total); B, FHO, K, NY, UC, US.  
 Notes: The 1961–1962 expedition of Cazalet and Pennington was designed to follow up the botanical work of the 1960 Oxford University Expedition, by collecting plants from similar vegetation zones, but different localities. A photographer accompanied the expedition to film aspects of the life of the Jívaro Indians at Taisha.  
 Publications: Pennington et al., 1962.
- CERON, CARLOS E.**  
 1957–; Ecuadorean; Botanist (Univ. Central del Ecuador, Quito).  
 1985–1986: Napo, vicinity of Dureno.  
 Nos. 116–407; Q.  
 Sep–Nov 1985: Napo, upper Río Napo area (with R.J. MARLES, W. Palacios, D. Neill, P. Gomez, and C. Cerón).  
 Nov 1986: Morona-Santiago (with D. Neill, M.A. Baker, W. Palacios, and J. Zaruma).  
 Nos. 417–488; QCNE, QAME.  
 1987–: Napo, intensive collections at Jatun Sacha and environs (Misahuallí), INIAP station near Coca, the Yasuní National Park, and other localities.  
 Nos. 516–5000+; QAME, MO, NY, A AU, QCNE, QCA, and further sets.  
 Dec 1988: Napo, Huamaní, Dureno (with A. GENTRY and C. Blaney).  
 Notes: C. Cerón studied the ethnobotany of the Cofán Indians for a doctoral dissertation (Univ. Central, Quito). Thereafter he collected under contract for the Missouri Botanical Garden for a floristic inventory of Jatun Sacha. He also collected under the number series of D. Neill with, among others, W. Palacios, P. Gómez, and R. Marles.



Publications: Cerón, 1987.

# CHAGUARO, MONICA

19??- ; Ecuadorean; Forestry student (?)

Apr 1982: Napo, Coca.

Few numbers; QCA, QAME.

Notes: M. Chaguaro assisted A. Flores in a government-sponsored tree inventory of lowland Napo.

# CHURCHILL, STEVEN P.

1948- ; U.S.; Botanist (New York Botanical Garden, New York).

Jul-Aug 1985: Napo, ~7 km S of Tena on road to Puyo, ~20 km S of Tena on road to Puyo, Añangu (with I. Sastre-De Jesús).

Nos. 13653-13662; 13663-13670; 13742-13881; NY, representative collections at QCA and AAU.

Notes: Specialist on neotropical mosses.

Publications: Churchill et al., in press.

# Clemants, Steven E.

1954- ; U.S.; Botany student (New York Botanical Garden, New York).

Jun 1982: Napo, Añangu (with J. LUTEYN, B. Øllgaard, B.B. Larsen, H. Balslev, and J. Boeke).

Jul 1982: Napo, Añangu (with J. LUTEYN, H. Balslev, and J. Boeke).

Notes: Doctoral dissertation on *Befaria*.

# Coello H., Flavio

1951- ; Ecuadorean; Biologist (Pontificia Univ. Católica, Quito, presently Metropolitan Touring, Quito).

Aug 1979: Napo, Coca, Auca oil fields, Río Napo, Río Tiputini, Nuevo Rocafuerte, Río Yasuní, Lagartococha, Río Aguarico (with L.B. HOLM-NIELSEN and J. Jaramillo).

Mar 1980: Pastaza, Curaray (Jesús Pitishka), Río Villano (with L.B. HOLM-NIELSEN and J. Jaramillo).

18 May-7 Jun 1980: Pastaza, Lorocachi, Río Curaray, Ceilán, Río Cononaco (J. BRANDBYGE, E. Azanza, and A. Freire (a snake expert from Guayaquil)).

Jun-Jul 1980: Napo, Lago Agrio, Río Aguarico, San Pablo de los Secoyas, Cuyabeno (with J. JARAMILLO).

Aug 1980: Pastaza, Tiwaeno, Toñampari, Río Curaray, Tzapino; Napo, Campana Cocha, Misahuallí (with J. JARAMILLO).

Feb 1981: Napo, Nuevo Rocafuerte (with J. JARAMILLO).

Notes: Former head of the National Parks Organization in eastern Ecuador.

Publications: Jaramillo and Coello (1982) gives the itineraries of both collectors.

# CONDAMINE, CHARLES MARIE DE LA

1701-1774; French; Geographer, naturalist.

Notes: Starting from Tarqui near Cuenca in May 1743 and passing Zaruma (60 km NW of Loja), La Condamine descended the Río Chinchipe, passed Rentema and

Jaén, and reached Borja on the Marañón on the 12 of June; there are no botanical collections.

Notes: La Condamine's map is reproduced and discussed in detail by Latorre (1988); Wurdack (1964, with two maps) gives an account of La Condamine's descent to Peru.

# Cox, L.

19??- ; U.S.; Phytochemist (Latinreco S.A., a Nestle research lab in Quito, presently with Nestle in Geneva).

Jul 1983: Napo, Cuyabeno (with H. BALSLEV and E. Azanza).

# CRESPI, CARLO

1891-1982; Italian; Salesian missionary who lived most of his life in Cuenca, which is also where he died.

1924: Morona-Santiago, vicinity of Indanza (Yunganza, Vásquez, Milagro, Sapote), mostly above 600 m; TOGRES, US.

Notes: C. Crespi worked with the Jivaroan Indians. In 1924, he collected over 600 ferns, which were sent to the herbarium "Togres" in Turin (rec. in 1926) and worked on by R. Bosco (1938) (Giuseppe Brocardo, Director of the herbarium, in litt., April 1991).

Publications: Crespi, 1924a,b.

# CROAT, THOMAS B.

1938- ; U.S.; Botanist (Missouri Botanical Garden, St. Louis).

Dec 1979: Napo, Tena-Puyo rd.; Pastaza, 58.1 km N of Puyo, 500 m alt.; and 61.5 km N of Puyo, 500 m alt.

Nos. 49627-49634; 49639-49668; MO, QPNRA, and duplicate sets widely distributed.

Oct 1980: Napo, rd. Lago Agrio to Río San Miguel, Coca, El Auca, Lago Agrio-Baeza rd., km 43, 560 m alt.

Nos. 50299-50374; 50375-50430; 50431-50441; MO, QPNRA, and duplicate sets.

Notes: Specialist on neotropical Araceae.

# D'Alessandro, Dennis

1951- ; U.S., resident of Ecuador, living in Vilcabamba; Horticulturist and professional plant collector, especially orchids.

May 1985: Zamora-Chinchipe, vicinity of Gualaquiza (with B. STEIN).

# D'ARCY, WILLIAM G.

1931- ; U.S.; Botanist (The Missouri Botanical Garden, St. Louis).

19??: Napo, Río Napo near Misahuallí.

Nos.? (at least no. 14034), MO.

Notes: Specialist on neotropical Solanaceae and floristics of Panama.

# DAVIS, E. WADE

1953- ; Canadian; Ethnobotanist (field work for his Ph.D. while at Harvard Univ., Cambridge, Massachusetts, presently working in Vancouver, British Columbia).

30 Jul-5 Aug 1974: Napo, 26 mi (40 km) W of, and vicinity of, Lago Agrio and Dureno (with T. PLOW-

- MAN and C. Sheviak).
- 1974: Pastaza, Mera, above 600 m alt. (with T. PLOW-MAN).
- 1976: Morona-Santiago, Cordillera de Cutucú (with M. MADISON).
- 13–18 Dec 1976: Napo, Baeza to Tena via Cosanga, Río Jondachi, Cotundo, and Archidona.
- Nos. 345–571; full sets at GH, ECON, and QCA; close to complete sets at US, U, K, NY, MO, F, and QCNE.
- 1981: Pastaza, Quiwado clearing, near the confluence of Río Quiwado and Río Tiwaeno (with J. Yost).
- Nos. 918–1062; full sets at GH, ECON, and QCA; close to complete sets at US, U, K, NY, MO, F, and QCNE.
- Notes: Anthropological research on the Waorani (Aucas) Indians with J. Yost.
- Publications: Davis and Yost, 1983a–c.
- DÍAZ S., CAMILO
- 19??–; Peruvian; Plant collector (employed by the Missouri Botanical Garden, but working out of AMAZ).
- May 1978: Napo, Río Putumayo, mostly on the Colombian side (with A. GENTRY and N. Jaramillo).
- DIELS, FRIEDRICH LUDWIG EMIL
- 1874–1945; German; Botanist (Botanic Garden of Berlin-Dahlem).
- Sep 1933: Pastaza, Mera, no collections below 600 m alt.
- Notes: In 1933, Diels brought a total of 925 collections to Berlin (Hiepko, 1987).
- Publications: Diels, 1937, 1938–1942.
- DIHUA, ERNESTO
- 19??–; Ecuadorean; Forester.
- Apr 1983: Napo, (Isla) Pompeya.
- Few collections; QCA.
- Notes: Mainly trees and wood samples.
- DODSON, CALAWAY H.
- 1928–; U.S.; Botanist (Marie Selby Botanical Gardens, Sarasota, Florida, presently working for the Missouri Botanical Garden, St. Louis).
- 22 Jan 1977: Napo, Limoncocha, La Primavera, downriver from Coca: no. 6636 (SEL).
- Also a few live collections were made of plants later cultivated at the Marie Selby Botanical Gardens; voucher specimens were later prepared from some of these, e.g., a *Begonia* (cultivated plant nos. 77–94, specimen no. 7755 (US), cited in the *Flora of Ecuador*).
- 18 Jun 1983: Napo, Tena-Puerto Napo road.
- Nos. 14054–14091; SEL, MO.
- Notes: Specialist on orchids; honorary director at QCNE. Dodson lives in Ecuador; he rarely collects east of the Andes at altitudes below 600 m. I have seen copies of his fieldbooks at SEL.
- DORR, LAURENCE JOSEPH
- 1953–; U.S.; Botanist (New York Botanical Garden, New York).
- Oct 1988: Morona-Santiago, Cutucú, 600–1000 m alt. (with L. Barnett).
- Nos. 5818–5899; NY, QCA, QCNE, and duplicates at AAU, S, CAS, GB.
- Notes: Specialist on Ericaceae; L. Dorr is building up a database on collections and collectors from the Cutucú mountain range.
- DRUMMOND III, BOYCE A.
- 1946–; U.S.; Entomologist (Illinois State Univ., Normal, until 1982, presently at Pikes Peak Research Station, Colorado).
- Dec 1973–Oct 1974: Napo, Limoncocha.
- ~35 collections representing about 30 species of Solanaceae; MO.
- Notes: Specialist on ithomiid butterflies (Nymphalidae), which are near-obligate feeders on Solanaceae.
- Publications: Drummond 1986, Drummond and Brown, 1987.
- DUKE, JAMES A.
- 1929–; U.S.; Botanist (United States Department of Agriculture).
- 1968–1969: Napo, Río Aguarico, probably near Lago Agrio; US.
- Notes: Duke collected only economic plants; the number of collections is unknown since the notes on this expedition are deficient (pers. comm.).
- Publication: Duke et al., 1987.
- DWYER, JOHN DUNCAN
- 1915–; U.S.; Botanist (Missouri Botanical Garden, St. Louis).
- Mar–Apr 1972: Napo, vicinity of Lago Agrio and Santa Cecilia, quadrat area of the Univ. of Kansas (partly alone, with B. MacBryde, partly with J.E. Simmons).
- Around nos. 9663–9800; MO, QCA, and specialist sets.
- Jul 1972: Napo, Lago Agrio.
- Nos. ?; MO, QCA, and specialist sets.
- Notes: Specialist on neotropical Rubiaceae.
- Eliasson, Uno
- 1939–; Swedish; Botanist (Dept. of Systematic Botany, Univ. of Göteborg).
- Jan 1977: Napo (with G. HARLING and L. Andersson).
- Itinerary given under HARLING.
- Notes: Specialist on neotropical Amaranthaceae and Myxomycetes.
- Publications: Eliasson, 1987; co-author of Farr et al., 1979.
- ELLENBERG, HEINZ HERMANN CHRISTOPH
- 1913–; German; Ecologist (Systematisch-Geobotanisches Institut, University of Göttingen).
- 9–14 Dec 1970: Pastaza, Baños, Mera, Puyo; Napo, Tena, Puerto Napo, and back to Puyo and Baños (with his wife C. Ellenberg).
- Nos. 3263–3368; GOET, USM, and specialist set.
- FAGERLIND, FOLKE
- 1907–; Swedish; Botanist (University of Stockholm).

Nov 1952–Feb 1953: Pastaza, Puyo (around nos. 1083–1246); Napo, Tiputini, and Lagartococha (20 Jan–5 Feb, around nos. 2203–2413); Shell-Mera, Mera (from at least no. 2427–) (with P.G. Wibom). The collection localities of this expedition are shown on map 17 in Holm-Nielsen et al., 1984.

Over 200 numbers in the lowlands below 600 m alt.; S.

Notes: The collections were not numbered in the field because the expedition's main purpose was the collection of morphological/anatomical samples. All voucher specimens were given to the Riksmuseum and (partly) numbered by G. Harling (G. Harling, in litt.; Fagerlind, in litt., September, 1990).

Fiske, Milan D.

1914–; U.S.; Amateur Orchidologist.

Jan 1971: Morona-Santiago, Bomboiza and environs (partly with B. MACBRYDE).

Jan 1972: Zamora-Chinchipe, Cordillera del Cóndor (with B. MACBRYDE, J.E. Simmons, and R.K. Fiske).

Mar 1975: Cuenca, Loja, Zamora (with A. Andreetta and L. Figuerroa).

Notes: Fiske collected only live orchids.

Publications: Fiske, 1972, 1974.

Fiske, R.K.

1937–; U.S.; M.D. Fiske's son, a Y.M.C.A. executive.

Jan 1972: Zamora-Chinchipe, Cordillera del Cóndor (with B. MACBRYDE, J.E. Simmons, and M.D. Fiske).

FLORES, A.

1940–; Ecuadorean; Forester (Dirección Nacional Forestal).

1980 and 1982: Napo, several localities along the Río Napo between Misahuallí and Coca.

~100 numbers; QAME, QCA.

Notes: Collections of trees, mostly sterile, in lowland Napo as part of forest inventories carried out by the Ecuadorean government. Some wood samples deposited at QAME. Flores was partly assisted by M. Chaguaro.

FOSTER, ROBIN

1945–; U.S.; Botanist (The Field Museum of Natural History, Chicago, presently at the Smithsonian Tropical Research Institute, Barro Colorado Island, Panama).

9 Sep 1977: Napo, Coca, Parq. Nac. de Yasuní, Limoncocha.

Nos. 3556–3884; F, MO, QCA, AAU.

FULLER, ?

1???–19??; U.S., writer (?)

19??: Pastaza, Río Bobonaza.

A small collection; NY (1st set), US.

Notes: At least nos. 90, 101, and 128 from the lower Bobonaza are cited in the *Flora of Ecuador*.

GENTRY, ALWYN H.

1945–; U.S.; Botanist (Missouri Botanical Garden, St. Louis).

Feb 1974: Napo, near Lago Agrio, Río Pushiño.

Nos. ? fieldbook misplaced (around his nos. 9729–62; MO, QCA, specialist sets).

Nov 1974: Napo, Lago Agrio; Auca oil fields.

Nos. 12400–12634; MO, QCA, specialist sets.

May 1978: Napo, Río Putumayo, Río Güepi, mostly on the Colombian side (with C. Díaz and N. Jaramillo). Nos. 21752–22128; MO, AMAZ, USM, specialist sets.

21 Jul 1986: Napo, 8 km W of Lumbaqui on Quito-Lago Agrio rd., 5 km N of hwy., edge of Cayambé-Coca Nat. Park, 0°2'N, 77°25'W and stream crossing ~5 km E of Lumbaqui (with J.S. Miller).

Nos. 54909–54957; MO, QCA, specialist sets.

Dec 1987: Napo, Misahuallí (with D. Neill).

Nos. 59875–60268; MO, QAME, specialist sets.

Dec 1988: Napo, Huamaní, Dureno (with C. Blaney and C. Cerón).

Nos. 63988–64367; MO, QAME, specialist sets.

Notes: Specialist on New World Bignoniaceae.

Publications: Gentry, 1977.

Giler, Manuel

1???–19??; Ecuadorean; Field assistant of W.H. Camp.

Itinerary given under CAMP.

GILL, RICHARD COCHRAN

18??–19??; U.S.; Writer, friend of W.H. Camp, interested in hallucinogens.

19??: Pastaza, Río Bobonaza and tributaries, Pacayacu-Sarayacu region.

Few collections, no. 3 is *Bixa orellana*; NY.

Publications: Gill, 1938.

GILMARTIN, AMY JEAN

1932–1989; U.S.; Botanist (Professor at the Universidad de Guayaquil 1962–1964; Professor of Botany at Washington State Univ., Pullman, Washington).

Notes: Gilmartin resided in Ecuador 1961–1965 and made more than 1000 collections, concentrating on Bromeliaceae. During these years she made several collecting expeditions (for which a partial itinerary was provided by C.A. Palací, one of her former students; in litt., 1989); she made no collection below 600 m. Gilmartin's collections are at US (1st set), QCA, GH, F, K, and P; her note-books are at the Marion Ownbey herbarium, Pullman, Washington.

Gómez, Patricia

195?–; Ecuadorean; Biology student (Pontificia Univ. Católica, Quito, presently curator at QCNE).

Sep 1981: Napo, Río Aguarico, Cuyabeno (with E. BRAVO-VELASQUEZ).

May 1985: Napo, Misahuallí (with D. NEILL).

Sep–Nov 1985: Napo (with R. MARLES, D. Neill, W. Palacios, and C. Cerón).

GRUBB, PETER J.

1935–; British; Plant ecologist (Univ. of Cambridge; School of Botany, Cambridge).



Jul-Sep 1960: The forest studied by the main expedition was about 7 km E of Tena at ~520 m alt. (with J.R. Lloyd, T.D. Pennington, and T.C. Whitmore).

~3000 numbers (starting at no. 1), mostly sterile ecological vouchers, but at least 310 fertile collections from Tena (with on average 4 duplicates) and 170 numbers of bryophytes; FHO, K, NY.

Notes: A general account of the expedition, including a map and chapters on botany by Grubb and Whitmore, is included in Emerson (1960).

Publications: Grubb et al., 1963; Grubb and Whitmore, 1966, 1967.

Hagberg, Mats

1954- ; Swedish; Botanist (Dept. of Systematic Botany, Univ. of Göteborg).

Apr 1985: Zamora-Chinchi, Zumbi-Paquisha, western slopes of Cordillera del Cóndor (with G. HARLING and L. Andersson).

Notes: Specialist on the genus *Monotagma*.

Halton, Joseph S.

1944-1989; U.S.; Horticulturist (Marie Selby Botanical Gardens, Sarasota, Florida, 1974-1987).

Jan 1979: Napo, Coca, Auca, Río Napo below Puerto Misahuallí (with L. BESSE and K. Tan).

5-6 Oct 1981: Morona-Santiago, Sucúa-Macas rd. (with H.E. LUTHER and L. Besse).

Nov 1983: Napo, Lago Agrio, Coca, Auca oil fields, Río Napo at Laguna Taracoa, Río Coca (with L. BESSE and A. Besse).

HARLING, GUNNAR W.

1920- ; Swedish; Botanist (University of Stockholm, since 1963 Dept. of Systematic Botany, Univ. of Göteborg).

19 May-24 Jun 1947: Morona-Santiago, vicinity of Méndez and Patuca on the Río Namangoza, around 600 m altitude.

A total of 1844 collections (nos. 1-1844) were made in Ecuador during the 1946-47 expedition; the collections from Patuca are around no. 1130; S.

5 Nov 1958-4 Jan 1959: Pastaza, vicinity of Mera and Canelos (around nos. 3144-3300); Napo, Coca, and Tena (ca. 4-26 Dec, around nos. 3558-3700). The collection localities of this and the previous expedition are shown on map 19 in Holm-Nielsen et al., 1984.

Some 400 numbers below 600 m alt.; S.

Feb-Jun 1968: Napo, mostly Ahuano, Santa Rosa, Coca, Lago Agrio, Limoncocha, Pañacocha, Tiputini, Nuevo Rocafuerte; Pastaza and Morona-Santiago, above 600 m alt. (with G. Storm and B. Ström; map 10 in Holm-Nielsen et al., 1984).

Nos. below 600 m alt.: 6944-7746; GB, QCA, S, and specialist sets.

Feb 1972: Napo, Santa Rosa, Coca (map 13 in Holm-Nielsen et al., 1984).

Nos. 11058-11105; GB, QCA, S, and specialist sets.

Feb-Apr 1974: Napo, vicinity of Coca, Río Payamino, Río Napo between Coca and Hda. San Carlos, Coca-Curaray road, 20-30 km S of Coca, Shushufindi; Morona-Santiago, Limón-Macas rd., at 600 m alt. (with L. Andersson; map 11 in Holm-Nielsen et al., 1984).

Nos. 11681-11992; 12939-12951; GB, QCA, S, and specialist sets.

Jan 1977: Napo, Coca-Curaray rd., 40 km S of Coca, Coca-Armenia Vieja, 15 Km S of Coca, Coca-Lago Agrio, 40 km NE of Coca, Río Payamino (with U. Eliasson and L. Andersson; and U. Molau, M. Neuen-dorf, and S. Fransén, who do not appear on the labels); map 13 in Holm-Nielsen et al., 1984).

Nos. 14739-14820; GB, QCA, S, and specialist sets.

Feb-Mar 1980: Napo, Lago Agrio-El Conejo rd., Dureno; Pastaza, Curaray and vicinity, Río Villano (with L. Andersson and L. Holm-Nielsen; map 12 in Holm-Nielsen et al., 1984).

Nos. 16506-16619; 17317-17714; GB, QCA, S, and specialist sets.

Jan 1982: Napo, vicinity of Coca (with J.-E. Bohlin, M. Lindström, and S. Roth; map 13 in Holm-Nielsen et al., 1984).

Nos. 19683-19867; GB, QCA, S, and specialist sets.

Apr 1985: Zamora-Chinchi, Zumbi-Paquisha, western slopes of Cordillera del Cóndor (with L. Andersson and M. Hagberg).

Nos. 23854-24160; GB, QCA.

Notes: Specialist on neotropical Cyclanthaceae and Compositae and principal editor of the *Flora of Ecuador* series (1973- ).

Publications: Harling, 1967, 1973, 1979.

HEINRICHS, ERICA

1907- ; German; Gardener and plant collector in Ecuador for the Botanic Garden of Berlin-Dahlem from Sep 1932 until Nov 1935.

Apr 1933: Napo, vicinity of Tena, 650 m alt.

Nos. 273-369; B, partly destroyed, F, G, M, MA, NY, ZT.

May 1933: Napo, Archidona, 670 m alt.

Nos. 370-408; (as above).

Jun 1933: Napo, vicinity of Tena.

Nos. 409-430; (as above).

Jul 1933: Napo, Nuevo Rocafuerte.

Nos. 431-513; (as above).

Jan 1935: Pastaza, Canelos, 600 m alt., Sarayacu, 450 m.

Nos. 795-799; 800-802; (as above).

1935: Morona-Santiago, between Arapicos and Macas, 800 m alt., vicinity of Macas, 1050 m alt., Río Upano and Méndez, around 600 m.

Nos. 803-809; 810-812; 813-815.

Notes: E. Heinrichs currently lives in Hamburg, Germany. There is a list of Heinrichs' collections (nos. 1-1000 with usually 12 duplicates) in the archives of the

Botanic Garden of Berlin-Dahlem, but without the localities in eastern Ecuador (Hiepko, 1987). During the present study, a complete list of Heinrichs' collecting stations was obtained, and copies of this were sent to Berlin and Göteborg. It is not possible to say how many specimens of the first set at B were saved because the collections were filed in the main herbarium. However, there are very complete sets in the other herbaria mentioned above and there are still some duplicates at B.

Publications: Heinrichs 1936, 1937.

#### HEISER, CHARLES B.

1920-; U.S.; Botanist (Univ. of Indiana, Bloomington).

1962: Napo, Tena.

Nos. 4870-4882; IND and specialist set.

1966: Pastaza, Puyo; Napo, Tena.

Nos. 6521-6531; (as above).

1969: Napo, Limoncocha.

Nos. 6893-6899 and 7000-7030; (as above).

1982: Napo, Tena, Baeza, and near Zamora above 600 m alt.

Nos. 8207; 8248-8251; 8253-8255; (as above).

1988: Morona-Santiago, Río Palora, above 600 m alt.

Nos. 8804-8810; (as above).

Notes: Specialist on Cucurbitaceae and Solanaceae. Not all collections are plant specimens; some are insects or seed collections. Heiser concentrated mostly on *Solanum* and other solanaceous plants.

Publications: Heiser, 1971.

#### Henderson, Andrew

1950-; British; Botanist (New York Botanical Garden, New York).

Apr 1986: Napo, Añangu (with H. BALSLEV and F. Borchsenius K.).

Notes: Specialist on neotropical palms.

#### HEPPER, F. NIGEL

1929-; British; Botanist (Royal Botanic Gardens, Kew).

15-17 Aug 1978: Napo, near jct. of Coca-Napo road, Limoncocha, Pompeia, and Laguna Taracoa.

Nos. 6419-6454; K, the mosses were given to C.C. Townsend and willed to the BM, the hepatics were likewise given to BM, the liverworts to E.W. Jones, OXF.

Notes: Several collections were live bromeliads and orchids, most are unicates and, with the exceptions mentioned above, kept at K.

#### HERMANN, FREDERICK JOSEPH

1906-1987; U.S.; employed by the U.S. Department of Agriculture, curator of the U.S. Forest Service Herbarium.

1964: Napo, Limoncocha.

Notes: At least one number, a fern specimen housed in US, is cited in *Flora of Ecuador*, 18:109. The specimen was

part of a small lot or a unicate (Lellinger, in litt., September 1990). For biographical notes on Hermann see *Taxon*, 37:509, 1988.

#### HIRTZ, ALEXANDER

1945-; Ecuadorean; Mining Engineer.

Notes: Hirtz collects and photographs orchids and bromeliads as an avocation. He has made over 500 collections of orchids, but few in the eastern lowlands. His collections include a number of types of species described by C.H. Dodson, C.L. Luer, and H.E. Luther.

#### HOLM-NIELSEN, LAURITZ

1946-; Danish; Botanist (Botanical Institute, Univ. of Aarhus, presently at the Danish Research Academy).

Apr-Aug 1968: Napo, Tena, Puerto Napo, Río Payamino, Río Suno, Archidona, Yuralpa; Pastaza, Shell-Mera (with S. Jeppesen).

This expedition is reported on in Holm-Nielsen and Jeppesen, 1968, and the collecting stations are also shown on map 1 in Holm-Nielsen et al., 1984.

Nos. 340-587; 633-933; 934-999; 1000-1056; AAU, QCNE, C, GB, GH, K, MO, NY, S, UC.

Feb-Jul 1973: The 2nd Danish botanical expedition to Ecuador worked mostly above 600 m alt., but some collections were made in Morona-Santiago, near Bomboiza, at 800 m alt. (with S. Jeppesen, B. Løjtnant, and B. Øllgaard). The expedition is reported on in Holm-Nielsen et al., 1975.

Nos. 4152-4301; AAU, QCNE, C, GB, GH, K, MO, NY, S, UC.

Aug 1979: Napo, Coca, Auca oil fields, Río Napo, Río Tiputini, Nuevo Rocafuerte, Río Yasuní, Lagartococha, Río Aguarico (with J. Jaramillo and F. Coello).

For collection localities of this and the next three expeditions see map 4 in Holm-Nielsen et al., 1984.

Nos. 19601-20285; AAU, QCA, QCNE, GB, S, and specialist sets.

Aug 1979: Napo, Misahuallí (partly with R. Alarcón and R. Andrade, partly only with R. Alarcón).

Nos. 19101-19142; 19364-19565; AAU, QCA, QCNE, GB, S, and specialist sets.

Feb 1980: Napo, Río Aguarico, San Pablo de los Secoyas, Río Aguas Negras, Puerto Montúfar, Río Cuyabeno, Río Aguarico, Dureno (p.p. with J. Jaramillo, J. Brandbyge, C.C. Berg, and G. Harling).

Nos. 21023-21754; AAU, QCNE, GB, S, and specialist sets.

Mar 1980: Pastaza, Curaray (Jesús Pitishka), Río Villano (with G. Harling, J. Jaramillo, and F. Coello).

Nos. 21804-22740; AAU, QCNE, GB, S.

Notes: Specialist on neotropical Passifloraceae and aquatic plants (Alismataceae, Ceratophyllaceae, Limncharitaceae, Hydrocharitaceae, Juncaginaceae, Najadaceae, Potamogetonaceae, Zannichelliaceae). Resident bota-



nist and professor at Pontificia Univ. Católica, Quito 1979–1981.

Publications: Holm-Nielsen and Haynes, 1986; Haynes and Holm-Nielsen, 1986; Holm-Nielsen and Jørgensen, 1986; Holm-Nielsen et al., 1975, 1988.

#### HOPKINS, HELEN C.

1953–; British; Botanist (New York Botanical Garden and Univ. of Oxford, presently Wau Ecology Institute, Papua, New Guinea).

Jan 1984: Napo, Cuyabeno.

~5 numbers (*Parkia*); A AU, NY, QCA.

Jan 1984: Napo, Cuyabeno (with H. Balslev).

~20 numbers; A AU, NY, QCA.

Notes: Specialist on the genus *Parkia*.

Publications: Hopkins, 1986.

#### HUMBLES, JACK

19??–; U.S.; Amateur botanist (American Peace Corps).

Feb 1973: Napo, Ahuano, Puerto Napo.

Few numbers; US, some in A AU.

#### IRVINE, DOMINIQUE

1952–; U.S.; Anthropologist (Stanford Univ., Stanford).

Feb 1982–Apr 1984: Napo, San José de Payamino.

Nos. DI 101–DI 1147; F, QCA, AAU, Q, and specialist sets.

Dec 1983: Napo, San José de Payamino (with H. BALSLEV).

1982–1984: Napo, Payamino, 40 km W of Coca (partly with M. Puraquilla and H. Jipa).

Notes: Anthropological research on the Runa (Quichua) Indians; Irvine's botanical collections are mostly sterile transect vouchers.

Publications: Irvine, 1987.

#### ISERN Y BATLLO, JUAN

1825–1866; Spanish; Botanist (Member of the "Comisión Científica del Pacífico," which traveled in South America 1862–1865).

Mar–Jul 1865: Napo, Archidona (around nos. 1305–1355 and again around 1802, 1803), Coca and vicinity (around no. 1390), Puerto Napo (around nos. 1470–1557) some from slopes of Sumaco (around no. 1584).

Perhaps 500 numbers in the lowlands; MA, many duplicates in GB.

Notes: Isern's itinerary can partly be reconstructed from numbered specimens cited in the *Flora of Ecuador*; see also Diels (1937:47) and Cuatrecasas (1935). Isern's collections were first studied by Cuatrecasas, who in 1935 started the series *Plantae Iserniana*. *Plantae Iserniana II* by H. Sleumer (1936) deals with the Ericaceae and *Plantae Iserniana III* by W. Trelease (1941) with the Piperaceae. Miller (1968) describes the expedition of which Isern y Batlló was a member.

#### JAMESON, WILLIAM

1796–1873; Scottish; Physician and botanist (Professor of

chemistry and botany at Univ. Central, Quito, 1826–1873).

Jan–May 1857: Napo, Archidona (in Feb), Tena, Puerto Napo, Ahuano, Santa Rosa and back.

At least his nos. 716–724 are from the eastern lowlands; K (1st set), B, BM, C, CGE, E, F, FI, G, MA, OXF, P, PH, Q, S, NY, US, W.

Notes: Jameson's letters and a portrait by A. Salas are at Kew, a further portrait is in the Hunt collection, Pittsburgh. Spruce (1908:342) provides a clue as to why Jameson made so few collections in the Oriente.

Also interesting is an obituary notice by Anderson-Henry (1876).

Publications: Jameson, 1858, 1865.

#### JARAMILLO AZANSA, JAIME LUIS

1944–; Ecuadorean; Botanist (Pontificia Univ. Católica, Quito).

Mar 1978: Napo, Archidona, Tena, Puerto Napo, Misahuallí, Coca, and vicinity. This expedition is reported on by Jaramillo and Coello, 1982, and the collection localities of this and Jaramillo's next five expeditions are shown on map 8 in Holm-Nielsen et al., 1984.

Nos. 67–102, 125–209; QCA, A AU.

Aug 1979: Napo, Coca, Auca oil fields, Río Napo, Río Tiputini, Nuevo Rocafuerte, Río Yasuní, Lagartococha, Río Aguarico (with L.B. HOLM-NIELSEN and F. Coello).

Jan 1980: Napo, vicinity of Coca.

Nos. 2172–2203; QCA, A AU.

Feb 1980: Napo, Río Aguarico, San Pablo de los Secoyas, Río Aguas Negras, Puerto Montúfar, Río Cuyabeno, Río Aguarico, Dureno (with L.B. HOLM-NIELSEN and J. Brandbyge).

Mar 1980: Pastaza, Curaray (Jesús Pitishka), Río Villano (with L.B. HOLM-NIELSEN and F. Coello).

18 May–7 Jun 1980: Pastaza, Lorocachi, Río Curaray, Ceilán, Río Cononaco (J. BRANDBYGE, F. Coello, and A. Freire (a snake expert from Guayaquil)).

Jun–Jul 1980: Napo, Lago Agrio, Río Aguarico, San Pablo de los Secoyas, Cuyabeno, Comunidad Siona, Comunidad Cofán (with F. Coello).

Nos. 2590–3041; QCA, A AU.

Aug 1980: Pastaza, Tiwaeno (Comunidad Waorani), Toñampari (Comunidad Waorani), Río Curaray, Tzapino (Comunidad Waorani); Napo, Campana Cocha (Comunidad Quichua), Misahuallí (with F. Coello).

Nos. 3192–3823; QCA, A AU.

Jan 1981: Napo, Río Napo between Misahuallí and Coca (with F. Coello).

Nos. 4049–4083; QCA, A AU.

Feb 1981: Napo, Coca, Nuevo Rocafuerte (with F. Coello).

Nos. 4138–4652; QCA, A AU.

- 26 Aug 1983: Zamora-Chinchipe, Tunanza, Finca de Vicente Berrú, above 600 m alt.  
Nos. 5924–5939; QCA.
- 20–31 Jul and 1–2 Aug 1984: Napo, Cuyabeno, Laguna Cañangüeno.  
Nos. 6818–6959; QCA.
- 22–28 Apr 1986: Napo, Cuyabeno (with K. Romoleroux).  
Nos. 8380–8527; QCA.
- 22–23 May 1987: Napo, rd. Santa Bárbara to La Bonita, above 600 m alt.  
Nos. 7662–7730; QCA.
- May–Jun 1987: Napo, Est. Exp. Payamino, INIAP station “El Chunchu.”  
Nos. 8342–8367; QCA.
- Jun–Jul 1987: Napo, INIAP station at San Carlos.  
Nos. 8368–8379 and 8379A; QCA.
- 19–20 Aug 1986: Napo, Tarapoa.  
Nos. 9004–9029; QCA.
- 21–24 Aug 1986: Napo, Cuyabeno.  
Nos. 9030–9101; QCA.
- 28–30 Dec 1986: Napo, rd. Playón de San Francisco-Santa Bárbara-La Bonita, above 600 m alt.  
Nos. 9313–9367; QCA.
- 1–2 Aug 1987: Napo, Payamino, INIAP station, and Cañon de los Monos.  
Nos. 9687–9694 and 9695–9698; QCA.
- Publications: Jaramillo and Coello, 1982.
- Jaramillo, N.  
19??–; Colombian; Botanical collector.
- May 1978: Napo, Río Putumayo, mostly on the Colombian side (with A. GENTRY and C. Díaz).
- Jensen, Allan R.  
195?–; Danish; Biology student (Botanical Institute, Aarhus University, Denmark).
- Jul 1982: Napo, Añangu (with B. ØLLGAARD, B.B. Larsen, and N.H. Andreasen).
- Jeppesen, Stig  
1943–; Danish; Botanist (Botanical Institute, Univ. Aarhus).
- Apr–Aug 1968: Napo; Pastaza (with L.B. HOLM-NIELSEN).
- Itinerary given under HOLM-NIELSEN.
- Notes: Specialist on Campanulaceae.
- Publications: Jeppesen, 1981.
- Jipa, H.  
19??–; Ecuadorean; Field assistant of D. IRVINE.
- 1982–1984: Napo, San José de Payamino (with D. IRVINE).
- Jørgensen, H.  
1915–; Danish; Field assistant of W.H. Camp (presently living in Guayaquil where he works as a car mechanic).
- Notes: Jørgensen had panned gold in the eastern cordillera for several years and had come to be on friendly terms with the Jívaros (Joyal, 1987). He collected independently or with Prieto (e.g., “JP-58”).
- Jørgensen, Peter Møller  
1958–; Danish; Biology student (Botanical Institute, Aarhus University).
- Feb–Aug 1983: Napo, Añangu, Río Yasuní, Garza-Cocha, Lagartococha (with J. LAWESSON and T. Laessøe).
- Notes: Specialist on neotropical Passifloraceae. Resident botanist and professor at Pontificia Univ. Católica, Quito, 1986–1989.
- Publications: Jørgensen et al., 1984, 1987; Holm–Nielsen, Jørgensen, and Lawesson, 1988.
- JUSSIÉU, JOSEPH DE  
1704–1779; French; Botanist and explorer.
- 1739: Zaruma, which is about 60 km NW of Loja; P.
- Notes: Jussieu was in Ecuador from 1739–1748, then went on south to Lima. Most of Jussieu’s plants seem to come from higher elevations, but at least the type of *Clidemia heterophylla* (Desr.) Gleason, labeled as from “Peruvia,” may come from lowland Zamora-Chinchipe (Wurdack, 1980, and pers. comm.).
- Kassow, P.  
1952–; Danish; B.B. Klitgaard’s companion.
- Feb 1988: Pastaza, Sarayacu (with B.B. KLITGAARD).
- KENNEDY, HELEN  
1944–; U.S.; Botanist. (During the 1982 expedition, Kennedy was employed by the Univ. of Manitoba, Winnipeg; during the 1971 expedition, she was at the Univ. of California, Davis; and during the 1978 expedition, she was associated with the Lyon Arboretum, Honolulu, Hawaii, but the expedition was funded entirely by the Marie Selby Botanical Gardens; presently Univ. of British Columbia).
- 4 Feb 1971: Napo, across river from San Miguel, Río Putumayo, Colombia.  
Nos. 789–810; DUKE and personal collection.
- 16–17 Jun 1978: Pastaza, Puyo, above 600 m alt.  
Nos. 3860–3908; SEL.
- 29 Jun 1978: Napo, 50 km W of Lago Agrio toward Baeza (with L. Besse and R. Baker).  
Nos. 4264–4270; AAU, GB, QCA, SEL, UBC.
- 30 Jun 1982: Napo, road Lago Agrio to Río San Miguel (with L. Besse who kept her own fieldbook and R. Baker).  
Nos. 4242–4278; AAU, GB, QCA, SEL, UBC.
- 1 Jul 1982: Napo, vicinity of Santa Cecilia (with L. Besse and R. Baker).  
Nos. 4279–4285; AAU, GB, QCA, SEL, UBC.
- 2 and 14 Jul 1982: Napo, road Lago Agrio to Coca (with L. Besse and R. Baker).  
Nos. 4268–4293; 4352; AAU, GB, QCA, SEL, UBC.
- 3 and 13 Jul 1982: Napo, vicinity of Coca and road to Auca oil fields (with L. Besse and R. Baker).  
Nos. 4294–4306; 4341; AAU, GB, QCA, SEL, UBC.
- 4–6 Jul 1982: Napo, road Coca to Armenia Vieja (with L.

Besse and R. Baker).

Nos. 4307-4321; AAU, GB, QCA, SEL, UBC.

8-11 Jul 1982: Napo, Añangu (with L. BESSE and R. Baker).

Nos. 4322-4347 (excl. 4341); AAU, GB, QCA, SEL, UBC.

14 Jul 1982: Napo, vicinity of Lago Agrio (with L. Besse and R. Baker).

Nos. 4348-4351; AAU, GB, QCA, SEL, UBC.

15 Jul 1982: Napo, road Lago Agrio to Río San Miguel (with L. Besse and R. Baker).

Nos. 4353-4356; AAU, GB, QCA, SEL, UBC.

17-19 Jul 1982: Napo, Tena-Pano road and vicinity of Tena (with L. Besse and R. Baker).

Nos. 4359-4383; AAU, GB, QCA, SEL, UBC.

20 Jul 1982: Pastaza and Napo, along Puyo-Tena road (with L. Besse and R. Baker).

Nos. 4371-4377; AAU, GB, QCA, SEL, UBC.

Notes: Specialist on neotropical Marantaceae. No specimens were deposited at WIN and HLA.

Publications: Kennedy, 1984, 1985, 1986a,b, Kennedy et al., 1988.

#### KLITGAARD, BENTE BANG

1959- ; Danish; Biology student (Botanical Institute, Aarhus University).

Nov-Dec 1987: Napo, Cuyabeno, 30 km N of Coca, Coca-Lago Agrio rd. (with U. Blicher-Mathiesen, who also collected under her own number series).

Nos. 67009-67018; AAU, QCA, and further sets.

Jan 1988: Napo, Jatun Sacha.

Nos. 67029-67031; AAU, QCA, and further sets.

Feb 1988: Pastaza, Sarayacu (with P. Kassow).

Nos. 67045-67048; AAU, QCA, and further sets.

Mar 1988: Napo, Río Huambuno.

Nos. 67049; AAU, QCA, and further sets.

Notes: Concentrated on *Brownea*.

#### KNAPP, SANDRA

1956- ; U.S.; Botanist (L.H. Bailey Hortorium, Cornell Univ., presently The Natural History Museum, London).

Jan 1984: Napo, Misahuallí (with J. Mallet).

Nos. 6148-6307, not all from the eastern lowlands; QCA and QCNE.

Notes: Specialist on neotropical Solanaceae.

#### KORNING, JØRGEN

1960- ; Danish; Biology student (Botanical Institute, Aarhus University).

30 Sep-25 Oct 1983: Napo, Añangu (with K. Thomsen).

Nos. 47000-47212; AAU, QCA, and specialist sets.

30 Nov 1983: Napo, Tarapoa (with K. Thomsen).

Nos. 47354-47366; AAU, QCA, and specialist sets.

1-11 Dec 1983: Napo, Añangu (with K. Thomsen).

Nos. 47367-47415; AAU, QCA, and specialist sets.

14-25 Jan 1985: Napo, Añangu (with B. ØLLGAARD

and K. Thomsen).

2 Apr-6 May 1985: Napo, Añangu (with K. Thomsen).

Nos. 58611-58743; AAU, QCA, and specialist sets.

9 Jan-20 Feb 1986: Napo, Añangu (with K. Thomsen).

Nos. 47416-47834; AAU, QCA, and specialist sets.

Notes: Working together with Thomsen in the SEF project (Studies of Ecuadorean Forests) on the composition and structure of different forest types at Añangu.

Publications: Korning et al., 1991.

#### KRESS, W. JOHN

1951- ; U.S.; Botanist (Marie Selby Botanical Gardens, Sarasota, Florida, presently National Museum of Natural History, Washington, D.C.).

27 Feb-1 Mar 1988: Napo, vicinity of Tena and Coca (with H.E. Luther and C. Roesel).

Nos. 882340-882392; SEL, QCNE, US.

27 Feb-1 Mar 1988: Napo, vicinity of Tena, Coca, and Alóag (with H.E. LUTHER and C. Roesel).

Notes: Specialist on Heliconiaceae.

Lara, ?

19??- ; Ecuadorean; Field Assistant? (Ministerio de Agricultura y Ganadería, Quito).

1975-1976: Napo, Territorio de los Aucas, Lago Agrio (with R.A.A. OLDEMAN, H.G. Oldeman, A. Arevalo, and G. Morales).

Nov 1976: Napo, Puerto Quito (with A. AREVALO).

#### Larsen, Bo Boysen

1956- ; Danish; Biology student (Botanical Institute, Aarhus University, presently with the County Administration, Ringkøbing, Denmark).

29 May-3 Jul 1982: Napo, Añangu (with J. LUTEYN, B. Boom, S. Mori, B. Øllgaard, H. Balslev, A. Jensen, S. Clemants, and J. Boeke in various combinations).

#### LAWESSON, JONAS E.

1959- ; Danish; Botanist (Botanical Institute, Univ. of Aarhus).

Feb-Aug 1983: Napo, Añangu, Río Yasuní, Garza-Cocha, Lagartococha (with T. Laessøe and P.M. Jørgensen). The collection localities of this expedition are shown on map 9 in Holm-Nielsen et al., 1984.

Nos. 39300-39413; 39414-39611; 39612-39829; AAU, QCA, QCNE.

Pastaza, Baños-Puyo road; Napo, Garza Cocha, Lagartococha, Río Yasuní.

Nos. 43287-43572; 44230-44499; AAU, QCA, QCNE.

Notes: Specialist on neotropical Passifloraceae.

Publications: Co-author of Holm-Nielsen et al., 1988.

#### LAESSØE, THOMAS

1958- ; Danish; Botany student (Botanical Institute, Univ. of Aarhus; Botanical Museum, Univ. of Copenhagen, presently at the Royal Botanic Gardens, Kew).

Feb-Aug 1983: Napo, Añangu, Río Yasuní, Garza-Cocha, Lagartococha (with J. LAWESSON and P. Møller



Jørgensen). Phanerogams were collected by P.M. Jørgensen and J. Lawesson; T. Laessøe concentrated on fungi, which he collected under his own number series.

Nos. 43095–43271, 43575–43803, 44617–44986; 43414–43425, 43475–43487, 43515–43533, 43539; 44223–44229, 44500–44616; AAU, C, QCA.

Jun–Aug 1985: Napo, Añangu, Laguna Taracoa.

Nos. 59501–59822, 59950–59999, 60801–60804; AAU, C, QCA.

Notes: Concentrating on fungi, especially Xylariaceae.

Publications: Laessøe et al., 1989.

#### LAEGAARD, SIMON

1933–; Danish; Botanist (Botanical Institute, Univ. of Aarhus).

Jan 1984: Napo, vicinity of Cuyabeno.

Nos. 51071–51263; AAU, QCA, numerous duplicate sets.

Feb 1984: Napo, Río Aguarico.

Nos. 51394–51593; AAU, QCA, numerous duplicate sets.

Jul 1984: Napo, vicinity of Cuyabeno.

Nos. 52504–52584; AAU, QCA, numerous duplicate sets.

May–Jun 1988: Napo, Waimo basecamp of the Conoco oil company, ~40 km east of Coca; vicinity of Loreto and vicinity of Jatun Sacha.

Nos. 71048–71067 and 71259–71324; AAU, QCA, numerous duplicate sets.

May–Jun 1988: Napo, airstrip of the Conoco oil company, at Río Tivacuno in the Yasuní National Park, also near Misahuallí (with B. BERGMANN and S.S. Renner).

Notes: Specialist on neotropical grasses. Resident botanist and professor at Pontificia Univ. Católica, Quito, 1984–1985.

#### LESCURE, JEAN-PAUL

1945–; French; Ecologist (ORSTOM).

1983–1984: Napo, Coca, Lago Agrio.

Nos. 2000–2277; QCA, P, and specialist set.

Notes: Working mainly on the ethnobotany of the Siona/Secoya Indians.

Publications: Lescure et al., 1987.

#### Leth-Nissen, Søren

1958–; Danish; Anthropology student (Aarhus University, presently Moesgård Museum, Højbjerg).

Aug 1981: Napo, for full itinerary see BRANDBYGE (with J. BRANDBYGE, E. Azanza, and L. Werling).

#### Lindström, Marie

1954–; Swedish; Botany student (Dept. of Systematic Botany, Univ. of Göteborg).

Jan 1982: Napo, vicinity of Coca (with G. HARLING, J.-E. Bohlin, and S. Roth).

Notes: Concentrating on lichens.

#### LITTLE, Jr., ELBERT LUTHER

1907–; U.S.; Dendrologist (U.S. Forest Service, Washington, D.C.).

1–7 Aug 1975: Napo, Lago Agrio, Río Aguarico, Tarapoa,

Shushufindi (with G. Campuzano). This expedition was part of an FAO project (UNDP/FAO-ECU/71/527). The collecting localities and specimen numbers may be found in a typed report co-authored by the participants and entitled “Catálogo de la flora del Nororiente Ecuatoriano,” produced by the Ministerio de Agricultura y Ganadería, Dir. General de Desarrollo Forestal, Conocoto, Ecuador, 2nd “impresión” dated May 1978 (copy in the author’s personal library at AAU).

Nos. 1–95, 185 (~87 collections below 600 m alt.); COL (1st set), QAME, US, S, Q, and two further sets.

27 Sep–16 Oct 1975: Morona-Santiago, Bomboiza, 700 m alt., Logroño, base of Cutucú mountains, at 1200 m alt., Sucúa, at 1000 m alt., Puerto Morona, Taisha, Santiago, and Shiramentsa (with A.T. Ortega U., A. Samaniego V., and F.A. Vivar).

This expedition was part of a project of the Ministerio de Agricultura y Ganadería and the Subcomisión Ecuatoriana PREDESUR de los Bosques del Sur. It was directed by the head-forester in Ecuador, Enrique Laso González, a former student of E. Little. The four participants co-authored a (typed) report in Dec 1975, entitled “Una colección de los arboles del suroriente del Ecuador (informe preliminar),” from which the collecting localities and specimen numbers are taken (copy in the author’s personal library at AAU).

Nos. 360–401; 478–488; 489–591; 592–600; 666–671; 687–749; 750–766; 777–797; COL (1st set), QAME, LOJA, US, Q, and specialist set.

Notes: Little came to Ecuador for the US Forest Service in 1943, 1965, and 1975 to help survey the timber resources in coastal Ecuador (especially Esmeraldas), Napo, and Morona-Santiago. The fieldbook of the 1965 expedition was lost in Ecuador, the fieldbook of the 1975 expedition is in Little’s personal library (Little, pers. comm., 1988).

Publications: Little and Dixon, 1969.

#### Lloyd, J.R.

1939–; British; Botanist (Exeter College, Oxford).

Jul–Sep 1960: Napo, vicinity of Tena (with P.J. GRUBB, T.D. Pennington, and T.C. Whitmore).

Publications: Co-author of Grubb et al., 1963.

#### LØJTNANT, BERT

1946–; Danish; Botanist (Botanical Institute, Univ. of Aarhus, presently at Løjtnant Consult, Randers, Denmark).

17–22 May 1979: Pastaza, Montalvo (with U. Molau).

Nos. 13307–13601; AAU, GB, and specialist sets.

10–11 Jun 1979: Morona-Santiago, Limón-Méndez rd., 24 km from Limón, Méndez-Paute rd., 850–600 m alt. (with U. Molau). The collection localities of the 1979 expedition are shown on map 3 in Holm-Nielsen et al., 1984.

- Nos. 14509–14522; AAU, GB, QCA, and specialist sets.  
 Notes: Specialist on orchids.  
 Publications: Løjtnant, 1977a–c.
- Lowell, Karen**  
 197?–; U.S.; Pharmacy student (Univ. of Illinois, Chicago).  
 Sep–Nov 1985: Morona-Santiago, Bomboiza (with M.A. BAKER).  
 Notes: Studying the ethnopharmacology of the Ashuar Indians.
- LUER, CARLYLE A.**  
 1922–; U.S.; Botanist (Marie Selby Botanical Gardens, Sarasota, Florida; presently associated with the Missouri Botanical Garden).  
 21 Feb 1982: Napo, Tena (with A. Hirtz).  
 At least one Acanthaceae and some orchids (SEL).  
 Feb 1987, Jan 1989: Morona-Santiago, Méndez-Morona rd., southern edge of Cordillera de Cutucú (with A. Hirtz).  
 Nos. 12637–12668; 13949–14002; MO, and further sets.  
 Notes: Luer concentrates on pleurothallid orchids; he has made no collections below 600 m.
- LUGO S., HÓLGUER**  
 1941–; Ecuadorean; Resident collector for G. Harling from 1968 to 1981.  
 Jun–Oct 1968: Pastaza, mostly Mera and Puyo, above 600 m; Napo, Puerto Napo, Hda. Latas, Apuya, Ahuano, Santa Rosa.  
 Nos. 1–611; GB (1st set), AAU, MO, NY, QCA, and S.  
 Mar–May 1969: Pastaza, mostly around Mera, Sarayacu, and Arosemena Tola; Napo, around Tena, Archidona, Misahuallí, and Ahuano.  
 Nos. 612–1327; (as above).  
 Jan–Apr 1971: Pastaza, Río Bobonaza, Nalpi, Tolín, Pucho, Chiquita, Canelos, Pacayacu, Sarayacu. Nos. 1328–1889; (as above).  
 Apr–Jun 1972: Pastaza, around Mera; Napo, Río Napo, especially Santa Rosa, Sumino, Guarapunta, and Río Bueno.  
 Nos. 1890–2501; (as above).  
 Jan–Apr 1973: Napo, Coca area, Aguarico, Shushufindi, Lago Agrio, and Santa Cecilia; also along road Lago Agrio to Chaco.  
 Nos. 2502–3817; (as above).  
 Oct–Nov 1974: Pastaza, Río Bobonaza, Canelos, Sarayacu, also along road Puyo to Macas (Morona-Santiago).  
 Nos. 3818–4812; (as above).  
 Sep–Oct 1976: Localities as in 1974 and Pastaza, Puyopungo, and Pomona.  
 Nos. 4813–5181; (as above).  
 Aug–Sep 1979: Pastaza, Arajuno, and vicinity, Río Bobonaza, especially Pacayacu, Sarayacu, Copataza, Shiguacocha, and Teresa Mama.  
 Nos. 5182–5890; (as above).  
 Apr 1981: Pastaza, Arajuno; Morona-Santiago, Arapicos along Río Palora.  
 Nos. 5891–6130; (as above).  
 Notes: H. Lugo lives in Mera, Pastaza; his collection localities from 1968–1981 are shown on map 15 in Holm-Nielsen et al., 1984.
- LUGO R., MANUEL**  
 1918–; Ecuadorean; Resident collector for E. Asplund and G. Harling.  
 Notes: M. Lugo, H. Lugo's father, collected about 300 numbers from Mera and vicinity during the 1940s; first set at S. (Information supplied by G. Harling.)
- LUTEYN, JAMES**  
 1948–; U.S.; Botanist (New York Botanical Garden, New York).  
 Jun 1982: Napo, Añangu (with B. Øllgaard, B.B. Larsen, and A. Jensen). ØLLGAARD also collected under his own number series.  
 Nos. 8493–8520; NY (1st set), QPNRA, AAU, GB, QCA.  
 Jun 1982: Napo, Añangu (with S. Mori).  
 Nos. 8521–8536; (as above).  
 Jun 1982: Napo, Añangu (with B. Øllgaard, B.B. Larsen).  
 Nos. 8437–8546; (as above).  
 Jun 1982: Napo, Añangu (with B. Øllgaard, B.B. Larsen, H. Balslev, S. Clemants, and J. Boeke).  
 Nos. 8547–8579; (as above).  
 Jul 1982: Napo, Añangu (with H. Balslev, S. Clemants, and J. Boeke).  
 Nos. 8580–8726; (as above).  
 Feb 1983: Napo, Añangu (with H. Balslev and J. Pipoly).  
 Nos. 8979–9122; (as above).  
 Notes: Specialist on neotropical Ericaceae.  
 Publications: Luteyn, 1983; co-author of Balslev et al., 1987.
- LUTHER, HARRY E.**  
 1952–; U.S.; Botanist (Marie Selby Botanical Gardens, Sarasota, Florida).  
 5–6 Oct 1981: Morona-Santiago, Sucúa-Macas rd. (with L. Besse and J.S. Halton).  
 Nos. 695–700; SEL, US, QCA.  
 27 Feb–1 Mar 1988: Napo, vicinity of Tena, Coca, and Alóag (with J. Kress and C. Roesel). KRESS also collected under his own number series.  
 Nos. 1272–1284; SEL, US, QCNE.  
 Notes: Specialist on Bromeliaceae.
- MACBRYDE, BRUCE**  
 1941–; U.S.; Botanist (The Missouri Botanical Garden, St. Louis, presently at the U.S. Dept. of the Interior, Washington, D.C.).  
 1971–1972: Napo, Santa Cecilia; Pastaza; Morona-Santiago (mostly with J.D. Dwyer and with J.E. Simmons).



~1000 numbers; MO, QCA, Q, US.

Jan 1971: Morona-Santiago, Bomboiza and environs, above 600 m alt. (with M.D. Fiske).

Jan 1972: Zamora-Chinchipe, Cordillera del Cóndor, above 600 m alt. (with M.D. Fiske, J.E. Simmons, and R.K. Fiske).

Apr 1972: Pastaza, Mera, and Puyo, above 600 m alt.

Notes: Resident in Quito, 1970-1972.

#### MADISON, MICHAEL T.

1947-; U.S.; Botanist (Marie Selby Botanical Gardens, Sarasota, Florida, presently a medical editor at the Univ. of California, Davis).

Around 16 Jan 1976: Morona-Santiago, vicinity of Logroño, 800-1000 m alt. (with F.R. Coleman); SEL.

12 Nov-1 Dec 1976: Morona-Santiago, Cordillera de Cutucú, general area 2°46'S, 78°06'W, between 1200 and 1800 m (partly with E.O. Bush, III, and E.W. Davis); SEL.

16-19 Jun 1978: Napo, Limoncocha (with T. Plowman and L. Besse).

Nos. 5296-5501; SEL, F, QCA, AAU; some collections in US, MO, K, S, NY, BH, COL, FTG, W.

Notes: Specialist on neotropical Araceae; also concentrating on *Peperomia*, particularly during the Cutucú expedition. Among Madison's achievements must be mentioned his expedition to Cerro Sumaco in 1979 (April 26-May 6) together with U. Molau and B. Løjtnant. Collections (nos. 6847-6974) were made between 3200 and 3830 m alt. Madison's fieldbooks are kept at SEL (seen by the author, January 1991); J. Luteyn, NY, keeps a copy of the pages concerning the Cutucú expeditions.

#### Madsen, Eilef

19??-; Danish; Resident in Ecuador.

Nov 1976: Napo, Coca (with H. BALSLEV).

#### Mallet, James

1955-; U.S.; Entomologist (Univ. of Texas, Austin).

Jan 1984: Napo, Misahuallí (with S. KNAPP).

#### MARLES, ROBIN J.

1956-; Canadian; Pharmacologist and ethnobotanist (College of Pharmacy, Univ. of Illinois).

Sep-Nov 1985: Napo, upper Río Napo area (with D. Neill, W. Palacios, P. Gómez, and C. Cerón).

Nos. EE1-EE140; F, MO, some duplicates at QCA.

Notes: Marles collected medicinal plant vouchers and interviewed Quichua Indian medicine men as part of a doctoral dissertation project, which also included chemical/pharmacological analyses of selected plant species.

Publications: Marles et al., 1988.

#### McColm, M.

1955-; U.S. Environmental education student (Univ. of California).

May 1985: Napo (with D. NEILL and A. Suarez).

#### McELROY, JEFF B.

19??-; U.S.; Botany student (Harvard Univ., Cambridge, Massachusetts).

Dec 1976-Jan 1977: Morona-Santiago, Río Macuma; Pastaza, Montalvo, Río Bobonazo, Río Conambo.

Around nos. 106-379; QCA, GH, and specialist sets.

Dec 1976: Napo, Cosanga area (with J.D. BOEKE).

Meneses, ?

19??-; Ecuadorean.

Undated: Napo (with VILLEGAS).

#### MEXIA, YNÉS ENRIQUETA JULIETTA

1870-1938; American; Botanical collector (Univ. of California).

Mar-Apr 1935: Baños, Mera, Puyo, Río Bobonaza near Canelos, back to Puyo and Mera, via Zatzayacu to Puerto Napo, Tena, Río Misahuallí, Archidona (on via Cosanga to Baeza).

Around nos. 6827-6957 (lowland Pastaza) and 7066-7320 (lowland Napo); UC, F, GH, ILL, K, LA, NA, NY, PH, U, US (a very complete set).

Notes: Mexía, Washington-born daughter of a Mexican general and an American lady, made almost 2000 collections in Ecuador, ~400 of them in the eastern lowlands. Her itinerary has been reconstructed from the collection numbers of cited specimens. Biographical information on Mexía is given by Bracelin (1935, 1938) and Ewan (1971); A. Carter conducted interviews with Mexía: "The Ynés Mexía botanical collections, an oral history," Berkeley: Regional Oral History Office.

#### MILLER, JAMES SPENCER

1953-; U.S.; Botany student (Missouri Botanical Garden, St. Louis).

21 Jun-10 Jul 1986: Napo, vicinity of Jatun Sacha, near Misahuallí (partly with School of Field Studies Medical Botany Class, partly with J.J. Anderson, and partly with W. Wilbert).

Nos. 2147-2559; MO, QCA, and duplicate sets.

21 Jul 1986: Napo, Lumbaqui area (with A. GENTRY).

Notes: Specialist on Boraginaceae, at the time based in Boston.

#### Molau, Anna

1955-; Swedish; former wife of U. Molau.

Notes: A. Molau accompanied B. LØJTANANT and U. Molau during part of their 1979 expedition.

#### MOLAU, ULF

1951-; Swedish; Botanist (Dept. of Systematic Botany, Univ. of Göteborg).

17-22 May 1979: Pastaza, Montalvo (with B. LØJTANANT).

10-11 Jun 1979: Morona-Santiago, Limón-Méndez rd., 24 km from Limón, Méndez-Paute rd., 850-600 m alt. (with B. LØJTANANT).

- Mar 1985: Napo, Coca (with L. Öhman). The itinerary of this expedition is shown on a map in Øllgaard and Molau, 1986:79.  
 Few collections below 600 m alt., around no. 1551; GB, QCA, S, AAU.  
 Notes: Specialist on neotropical Scrophulariaceae.  
 Publications: Molau, 1983; Holmgren and Molau, 1984.
- MORALES, GUSTAVO L.**  
 19??-; Colombian; Botanist, living in Popayán, Colombia.  
 1975-1976: Napo, Territorio de los Aucas, Lago Agrio (with R.A.A. OLDEMAN, H.G. Oldeman, A. Arevalo, G.L. Morales, and Lara; in various combinations).  
 Jul 1982: Napo (with J. Abalo).  
 Few collections of *Heliconia*; QCA.  
 Publications: Abalo and Morales, 1983.
- MORI, SCOTT A.**  
 1941-; U.S.; Botanist (New York Botanical Garden, New York).  
 Jun 1982: Napo, Añangu (with J. LUTEYN, B. Boom, B.B. Larsen, and B. Øllgaard in various combinations).  
 Jun 1982: Napo, Añangu.  
 ~8 numbers (NY); nos. 14682, 14683, 14684, and a few more; the relevant pages are missing from the fieldbook (Dorr, pers. comm., 1988).  
 Notes: Specialist on neotropical Lecythidaceae and Vochysiaceae.
- MOWBRAY, ROBERT**  
 1935-; U.S.; Forester (U.S. Agency for International Development).  
 Oct 1969-Mar 1970: Napo, vicinity of Limoncocha.  
 Around nos. 69004-69958 and 70243-70613; MO and specialist sets.  
 Notes: Collections made as part of a doctoral dissertation in forestry; number series begins with the year, e.g., 70100.
- NAVARRETE, R.**  
 19??-; Ecuadorean; Biology student (Pontificia Univ. Católica, Quito).  
 Sep 1978: Napo, Río Napo, and Río San Miguel.  
 Few numbers; QCA.
- NEILL, DAVID A.**  
 1953-; U.S.; Botanist (Missouri Botanical Garden, St. Louis).  
 1985-1989: Mostly collections of trees from Napo, occasionally also Pastaza (Río Curaray, Aug 1985) and Morona-Santiago (Bomboiza, Nov 1986); Neill's major collecting localities are Jatun Sacha Biological Station near Misahuallí, the INIAP forest reserve near Coca, the vicinity of Coca, and the Yasuní National Park (with, among others, M.A. Baker, C. Cerón, A. Gentry, P. Gómez, R.J. Marles, M. McColm, W. Palacios, J. Priest, B. Stein, G.A. Suárez, and J. Zaruma).  
 Nos. 5850-9400; QAME, MO, NY, AAU, QCNE, QCA, and further sets.
- Notes: Most of D. Neill's collaborators also collect(ed) under their own number series; see the respective entries. D. Neill is resident botanist of the Missouri Botanical Garden in Ecuador, preparing a field guide to the trees of the eastern Ecuadorean lowlands ("Arboles de la Amazonía Ecuatoriana," to be co-authored with W. Palacios, sponsored by USAID) of which Neill and Palacios, 1989, is a precursor. Another goal is a florula of Jatun Sacha Biological Reserve, co-founded by D. Neill and G.A. Suárez; the School for Field Studies (S.F.S., on some labels) holds courses on ethnobotany at this station. Neill is a specialist on Leguminosae.  
 Publications: Neill and Occhioni, 1989; Neill and Palacios, 1989, co-author of Marles et al., 1988.
- Nilsson, Dan**  
 1947-; Swedish; Botany student (Dept. of Systematic Botany, Univ. of Göteborg).  
 1972: Napo, Coca region, Santa Rosa (with L. ARVIDSSON).  
 Notes: Concentrated on lichens.
- NOWAK, JOHANNES BOSCO**  
 1955-; German; Entomologist (Ministerio de Agricultura y Ganadería del Ecuador and Pontificia Univ. Católica, Quito).  
 Sep 1981: Napo, Nuevo Rocafuerte, northern side of Río Napo.  
 ~180 numbers; QCA, QCNE, QCA, and 3 further sets.  
 Notes: Nowak collecting mainly woody species on a 10 km transect.
- Öhman, Liselotte**  
 1959-; Swedish; former wife of U. Molau, Scientific illustrator (free lance).  
 Mar 1985: Napo, Coca (with U. MOLAU).
- Oldeman, H. G.**  
 19??-; Dutch; R.A.A. Oldeman's cousin.  
 1975-1976: Napo, Territorio de los Aucas, Lago Agrio (with R.A.A. OLDEMAN, A. Arevalo, G. Morales, and Lara).
- OLDEMAN, ROELOF ARENT ALBERT**  
 1937-; Netherland citizenship; Ecologist (working for ORSTOM at the time, presently Wageningen Agricultural University).  
 1975-1976: Napo, Lago Agrio; Pastaza, Tzapion, Tihueno, Cononaco (with H.G. Oldeman, A. Arevalo, G. Morales, and Lara, in various combinations).  
 Perhaps 200 numbers (starting at no. 1); QPNRA, some in QCA and with specialists.  
 Notes: Oldeman worked as ecologist in the Programa Nacional de Regionalización of the Ministerio de Agricultura y Ganadería (M.A.G.). The collecting was part of ecological studies also concerning the Andes and the Pacific side of Ecuador. All Oldeman's documents on his collecting remained in Ecuador.

Publications: Arevalo, Oldeman, and Yost, 1976. Further reports printed and mimeographed by M.A.G., Quito.

#### ØLLGAARD, BENJAMIN

1943– ; Danish; Botanist (Botanical Institute, Univ. of Aarhus).

Jul 1980: Morona-Santiago; Pastaza, Río Bobonaza, Río Capihuari, Montalvo; Napo (with J. Brandbyge, E. Azanza, S. Roth, and C. Sperling). The collection localities of this expedition are shown on map 6 in Holm-Nielsen et al., 1984.

Nos. 34490–35516; AAU, QCA, and duplicate sets mainly in MO, NY, and GB.

Jun–Jul 1982: Napo, Añangu (with J. Luteyn, B. Boom, S. Mori, B.B. Larsen, A. Jensen, and N.H. Andreasen in different combinations). LUTEYN collected also under his own number series.

Nos. 38821–39290; AAU, QCA, MO, NY, GB.

Jan 1985: Napo, Añangu (with J. Korning and K. Thomsen).

Nos. 57001–57202; QCA, AAU.

Notes: Specialist on neotropical Lycopodiaceae. Resident botanist and professor at Pontificia Univ. Católica, Quito, 1990–1992.

Publications: Øllgaard, 1979, 1988; Øllgaard and Molau, 1986; co-author of Balslev et al., 1987.

#### ONORE, GIOVANNI

1941– ; Italian; Entomologist (Curator of the Zoological Museum of the Pontificia Univ. Católica, Quito).

Without date: Napo (probably vicinity of Coca).

12 unnumbered collections of *Heliconia* and *Maranta*; QCA.

#### ORTEGA U., ALBERTO T.

19??– ; Ecuadorean; Ingeniero Agrónomo (Instituto de Ciencias Naturales, Univ. Central del Ecuador).

27 Sep–16 Oct 1975: Morona-Santiago (with E.L. LITTLE, H. Samaniego, and F.A. Vivar).

Itinerary given under LITTLE.

Sep 1976 and Jan 1977: Morona-Santiago, vicinity of Taisha.

Nos. 1–223; Q, US, S. Wood samples with A. Mariaux, France.

Notes: Plants collected during a floristic inventory project.

Publications: Ortega, 1976.

#### OSCOLATI, GAETANO

1808–1884; Italian; Naturalist specializing in the collection of insects.

20 Jul–25 Nov 1847: Napo, Archidona, from there to Puerto Napo, where he remained for three months at the house of Manuel Villavicencio with whom he collected mainly birds and insects but also some mosses (De Notaris, 1859; Steere, 1948b); on 26 Oct, Osculati started down the Río Napo, stopping some days in Ahuano which he left on Nov 1; he then went on to Santa Rosa, leaving it on Nov 12; Nov 14 he passed the

mouth of the Río Payamino and reached Coca; he proceeded down the Napo, passing Jivino (Nov 15), the mouth of the Río Indillana, Huama (Nov 17), the mouth of the Tiputini (Nov 18), and Aguarico (Nov 20); he reached Curaray on Nov 25 (and continued downriver to Belém which he reached on 30 March 1848).

Notes: Information on Osculati may be found in Bottoni (1929), Papavero (1973:343–347), and Isenburg (1989).

#### PALACIOS, WALTER A.

1959– ; Ecuadorean; Ingeniero Forestal (Dirección Nacional Forestal, herbarium Centro Forestal Conocoto, QAME).

1985–1989: Napo; Pastaza, Morona-Santiago (with, among others, M.A. Baker, C. Cerón, P. Gómez, R. Marles, D. Neill, B.A. Stein, and J. Zaruma).

Nos. 1–3800; QAME, MO, NY, AAU, GB, QCNE, QCA, and further sets.

Notes: Palacios collected, together with D. Neill, under contract with the Missouri Botanical Garden, mostly trees. He concentrated on Meliaceae.

Publications: Neill and Palacios, 1989.

#### PEARCE, RICHARD WILLIAM

Ca. 1835–1868; British; Horticulturist (working for the Veitch Tropical Nurseries in Exeter, Great Britain).

Notes: Pearce collected near Cuenca in 1862 and dispatched “some six large cases of plants from Guayaquil” (Veitch, 1906); specimens in K and BM. Apparently, Pearce did not descend to the eastern lowlands.

#### PENNINGTON, TERENCE DALE

1938– ; British; Botanist (Oxford Univ.; since 1979, Associate Researcher at the New York Botanical Garden, and the Royal Botanic Gardens, Kew).

Jul–Sep 1960: Napo, 7 km east of Tena (with P.J. GRUBB, J.R. Lloyd, and T.C. Whitmore).

Oct 1961–Feb 1962: Morona-Santiago, Taisha (with P.C.D. CAZALET).

Oct 1982: Napo, 30 km NNW of Coca, Río Huashito. 100 numbers; QCA, K, NY.

Nov 1982: Morona-Santiago, Bomboiza? (with G. Tenorio).

75 numbers; QCA, K, NY.

May 1987: Napo, Lumbaqui.

114 numbers; QCA, QAME, K, NY.

Notes: Specialist on neotropical Meliaceae, Sapindaceae, and Sapotaceae.

Publications: Pennington, 1981, 1990; Pennington et al., 1962.

#### PINKLEY, HOMER V.

1938– ; U.S.; Ethnobotanist (Harvard Univ., Cambridge, Massachusetts, presently a private botanical researcher).

1966: Napo, Conejo, Santa Rosa de Sucumbíos, Santa



Cecilia, on the Río Aguarico, and near Dureno; in Colombia, San Antonio, on the Río Guamúes.

At least 546 numbers; ECON, S; few duplicates in QCA, and with specialists.

Notes: Pinkley did research on the ethnobotany of the Cofan.

Publications: Pinkley, 1968, 1969a-c, 1973.

Pipoly, John

1955-; U.S.; Botanist (New York Botanical Garden, New York, presently at the Missouri Botanical Garden, St. Louis).

Feb 1983: Napo, Añangu (with J. LUTEYN and H. Balslev).

Notes: Specialist on neotropical Myrsinaceae.

PLOWMAN, TIMOTHY

1944-1989; U.S.; Botanist (a student at Harvard during his first expedition; subsequently curator at the Field Museum of Natural History, Chicago).

30 Jul-5 Aug 1974: Napo, 26 mi (40 km) W of and vicinity of Lago Agrio and Dureno (with E.W. Davis and C. Sheviak).

Nos. 3990-4000 and 4080-4089; 4001-4079; first set GH; 2nd QCA or another herbarium in Quito, further sets in BH, BIRM, COL, DAV, DBN, F, HB, K, MO, NY, S, SEL, U, US.

16-19 Jun 1978: Napo, Limoncocha (with M. MADISON and L. Besse).

Notes: Specialist on neotropical Erythroxylaceae and *Brunfelsia*.

Publications: Vickers and Plowman, 1984; Plowman, 1989.

POORTMAN, HUGO A.-C.

18??-19??; Belgian; Botanical collector.

Notes: Poortman (also spelled Poortmann) collected for E.F. André in Loja and Zamora-Chinchipec from January to June 1882, thereafter in northernmost Peru (Diels, 1937; Wurdack, 1979); together with André's material, his first set is at P, few sheets also at K, GH, F, NY, RSA. At least his numbers 79-517 are from Loja and Zamora; he may also have collected along the Río Zamora at lower elevations (Wurdack, 1979, and pers. comm.).

PRESCOTT, GERALD W.

1899-1988; U.S.; Botanist, algologist (Albion College, Albion, Michigan, during his first visit; from 1946 on at Michigan State University, East Lansing, but the first set of his collections is in the herbarium of Eastern Michigan University in Ypsilanti).

Feb 1953: Pastaza, near Puyo and Mera; Napo, Río Cuyabeno.

Between his nos. 400-800 and around his no. 1537 (cited by Jeppesen, 1981:71); EMC, DS, NY.

Notes: Prescott first came to Ecuador in May 1944 as field explorer for the US government quinine expedition.

During that time he collected in Imbabura and Pichincha (fide Steere, 1945a:122). Most of his collections are algae.

Publications: Prescott, 1946, 1947.

Priest, J.

19??-; British; Botany student (?)

Oct 1985: Napo (with D. NEILL).

Prieto, Francisco

18??-19??; Ecuadorean; Field assistant of W.H. Camp.

Note: Prieto was a *Cinchona* collector from San Marcos, Cañar, and was able to provide much ethnobotanical information (Joyal, 1987).

Puraquilla, M.

19??-; Ecuadorean; Field assistant of D. IRVINE.

1982-1984: Napo, San José de Payamino (with D. IRVINE).

RENNER, SUSANNE SABINE

1954-; German; Botanist (Botanical Institute, Univ. of Aarhus).

13-18 May 1988: Napo, Cuyabeno.

Nos. 69055-69094; complete sets in AAU, QCA, US; some duplicates in CAS, TEX, FLAS.

30 May-3 Jun 1988: Napo, vicinity of Waimo base camp of the Conoco oil company, ~40 km east of Coca; vicinity of Loreto and vicinity of Jatun Sacha.

Nos. 69308-69334; complete sets in AAU, QCA, US; some duplicates in CAS, TEX, FLAS.

May-Jun 1988: Napo, airstrip of the Conoco oil company, on Río Tivacuno in the Yasuní National Park; near Puerto Misahuallí (with B. BERGMANN and S. Laegaard).

Notes: Specialist on neotropical Melastomataceae.

Publications: Renner et al., 1991.

RIMBACH, AUGUST

1862-1943; German; Professor of Botany and Zoology in Cuenca (1889-1892), resident in Riobamba (after 1921).

Apr-May 1894: Pastaza, Canelos, Río Bobonaza, Pacayacu, Sarayacu, Río Pastaza (with his brother Karl Rimbach); A, B, BM, CAS, F, FHO, GH, MA, MO, NA, NY, P, S, UC, US, W.

Notes: Rimbach collected at least 832 numbers (starting at no. 1) in Ecuador, but only one from the Río Pastaza at 1200 m altitude is cited in the *Flora of Ecuador* (volumes 1-39).

Publications: Rimbach, 1897, 1932.

Roesel, Cheryl

1956-; U.S.; Technician (Marie Selby Botanical Gardens, Sarasota, Florida, presently National Museum of Natural History, Washington, D.C.).

27 Feb-1 Mar 1988: Napo, environs of Tena, Coca, and Alóag (with J. KRESS and H.E. Luther).

ROMOLEROUX, KATYA

1962-; Ecuadorean; Biology student (Pontificia Univ.

Católica, Quito).

22–28 Apr 1986: Napo, Cuyabeno (with J. JARAMILLO).

Notes: Collections made during a week-long course in tropical dendrology.

Roth, Susanne

1952–; German; Botany student (Univ. of Göteborg).

Jul 1980: Morona-Santiago; Pastaza; Napo (with B. ØLLGAARD J. Brandbyge, E. Azanza, and C. Sperling).

Jan 1982: Napo, vicinity of Coca (with G. HARLING, J.-E. Bohlin, and M. Lindström).

Notes: Concentrating on ferns.

Samaniego V., Alfredo

19??–; Ecuadorean; Ingeniero agrónomo (Univ. of Loja).

27 Sep–16 Oct 1975: Morona-Santiago (with E.L. LITTLE, A.T. Ortega, and F.A. Vivar).

Itinerary given under LITTLE.

Santos Dea, ?

19??–; Ecuadorean; employee of Franciscan mission in Pompeya (Napo).

Aug 1982: Napo, Pompeya and vicinity (with H. BALSLEV).

Sastre-De Jesús, Ines

1956–; U.S.; Botanist (New York Botanical Garden, New York).

Jul–Aug 1985: Napo, ~7 km S of Tena on road to Puyo; ~20 km S of Tena on road to Puyo, Añangu (with S. CHURCHILL).

Notes: Specialist on neotropical mosses.

Publications: Co-author of Churchill et al., in press.

SCHINNER, FRANZ

19??–; Austrian; Botanist (Institute of Microbiology, University of Innsbruck).

Apr 1980: Napo, Lago Agrio, Dureno, San Pablo.

Few numbers.

Notes: Schinner collected only Myxomycetes.

Publications: Schinner, 1981.

SCHULTES, RICHARD EVANS

1915–; U.S.; Botanist (Harvard Univ., Cambridge, Massachusetts).

Notes: When studying the Cofan Indians along the Río Sucumbíos near San Miguel in Colombia, Schultes made about 50 collections on the Ecuadorian bank of the river, but he labeled them all as Colombian (in litt., 18 Apr 1989); GH, F, US, and further sets.

SCHULTZE-RHONHOF, ARNOLD

1875–1948; German; Geographer, entomologist, and botanist.

Jan–Nov 1937: Pastaza, Mera, Puyo, Canelos, Pacayacu, where they stayed from Mar until 6 Nov (with H. SCHULTZE-RHONHOF); B, G.

Notes: Schultze-Rhonhof and his wife lived in Ecuador from the end of 1934 until March 1939, collecting plants and insects. They collected in the Andes, the western and the eastern lowlands and returned by ship

via the Putumayo-Manaus-Belém route. Soon after leaving Belém, their ship was sunk, and the rich collections were lost (Schultze-Rhonhof, 1950:223, and biographical note by H. Schultze-Rhonhof in the archives of the Botanic Garden of Berlin-Dahlem). From 1937 to 1939, Berlin-Dahlem received a total of 1497 numbers sent by the Schultze-Rhonhofs from Ecuador (Hiepko, 1987). There is no detailed information about this material at B because the entire archives burned in 1943. At least some of it has been saved; of the six Schultze-Rhonhof specimens, all from Mera and Puyo, cited in the first 39 volumes of the *Flora of Ecuador* two are extant nos. 1856 and 2958), four destroyed and without duplicates (nos. 1854, 2724, 2734, and 2866).

Publications: Schultze-Rhonhof, 1950.

SCHULTZE-RHONHOF, HERTHA

18??–19??; German; Botanist, wife of Arnold Schultze-Rhonhof.

Jan–Nov 1937: Pastaza, Mera, Puyo, Canelos, Pacayacu (with A. SCHULTZE-RHONHOF).

Notes: Numerous new species based on the Schultze-Rhonhof's collections are described in a series of papers edited by L. Diels (1937, 1938–1942).

SEF

Studies of Ecuadorean Forests, project of the Botanical Institute in Aarhus in collaboration with the New York Botanical Garden and the Pontificia Univ. Católica in Quito, with L. Holm-Nielsen and B. Øllgaard principal investigators, 1982–1984. During this project, specimens were collected by N.H. Andreasen, H. Balslev, A. Barfod, J. Boeke, B. Boom, B.B. Larsen, S. Clemants, A. R. Jensen, P.M. Jørgensen, J. Korning, J. Lawesson, T. Laessøe, J. Luteyn, S. Mori, B. Øllgaard, J. Pipoly, F. Skov, and K. Thomsen (see respective entries).

SHEMLUCK, MELVIN

19??–; U.S.; Anthropology student (? Univ. of Chicago).

Aug 1979–Jul 1980: Pastaza, Puyo and vicinity (Río Chico, at 1000 m alt.) and Canelos and vicinity.

Notes: Shemluck studied Quichua Indians and made several hundred botanical collections (F, GH, and specialist set), but apparently none below 600 m alt.

Sheviak, Charles J.

1947–; U.S.; Botanist (Biological Survey, New York State Education Department, Albany, New York).

30 Jul–5 Aug 1974: Napo, Lago Agrio, and Dureno (with T. PLOWMAN and E.W. Davis).

Note: Some collections were made under Sheviak's own number series; these were mostly distributed to various specialists, but some are at GH(AMES) and NYS (Sheviak, in litt., January 1991).

Simmons, John Edward

1951–; U.S.; Herpetologist (Museum of Natural History, Univ. of Kansas, Lawrence, U.S.A.).

Mar 1972: Napo, Lago Agrio (with J.D. DWYER).

Apr 1972: Napo (with B. MACBRYDE).

Jan 1972: Zamora-Chinchipe, Cordillera del Cóndor (with B. MACBRYDE, M.D. Fiske, and R.K. Fiske).

Notes: At the time, Simmons was a student doing research under the supervision of W. Duellman.

#### SKOV, FLEMMING

1958- ; Danish; Biology student (Botanical Institute, Aarhus University).

Jul-Aug 1985: Napo, Añangu (with H. BALSLEV and A. Barfod).

3-12 Nov 1987: Napo, Añangu, Ríos Yasuní and Payamino (with F. Borchsenius K. and U. Blicher-Mathiesen).

Nos. 64752-64817; AAU, QCA, QCNE.

Notes: Concentrating on palms.

Publications: Skov and Balslev, 1989.

#### SKUTCH, ALEXANDER FRANK

1904- ; US; Ornithologist and naturalist; presently living in San Isidro del General, Costa Rica.

Aug-Sep 1939: Pastaza, vicinity of Puyo, around 900 m alt.

Nos. 4392-4561; US; F, NY, GH, K, MO.

Notes: In 1940, Skutch again came to Ecuador on one of the World War II surveys (cf. General Introduction) but made few, if any, collections on that expedition (in litt., October 1990).

#### SODIRO, LUIS

1836-1909; Italian; Jesuit priest, resident in Quito from 1870.

Notes: Sodiro's collections and opera are of the greatest importance for Ecuadorean floristics (see Diels, 1937; Stafleu and Cowan, 1976-1988; also Nicolson, 1983). Sodiro made no collections in the eastern lowlands. Croat's (1988) statement that the Sodiro collection is on loan to Stockholm in its entirety for studies of the *Flora of Ecuador* is incorrect. Many of Sodiro's collections are deposited at the Universidad Central (Q); his original collection is at Herbario P. Luis Sodiro in the Biblioteca Aurelio Espinosa Pólit (QPLS) in Quito; at least some duplicates in A, AAU, B, BM, BP, FI, G, GH, K, NY, P, S, US, and SI (the Darwinion in Buenos Aires).

#### SPARRE, BENKT

1918-1986; Swedish; Botanist (Museum of Natural History, Stockholm).

1966-1967: Napo, Tena, Lago Agrio, El Conejo; Pastaza, vicinity of Puyo; Morona-Santiago, Bomboiza (see map 20 in Holm-Nielsen et al., 1984).

Nos. 13001-13252 (21-28 Nov), 14992-15035 (26 Mar), 15879-15956 (6 May), 17467-17651 (15-17 Jul), 17690-17725 (19 Jul); around no. 19000 in Bomboiza; S.

Notes: Specialist on neotropical Tropaeolaceae. Resident

in Quito and professor at the Universidad Central, 1966-1967. His field notes are archived at S.

Publications: Sparre, 1973; co-editor of *Flora of Ecuador*, 1973-1986 (up to and including volume 24).

#### Sperling, Calvin Ross

1957- ; U.S.; Botany Graduate Student (Harvard Univ., Cambridge, Massachusetts; presently at National Germplasm Resources Laboratory, USDA, Beltsville, Maryland).

Jul 1980: Morona-Santiago; Pastaza; Napo (with B. ØLLGAARD, J. Brandbyge, E. Azanza, and S. Roth).

Notes: Specialist on Basellaceae.

#### SPRUCE, RICHARD

1817-1893; British; Botanist, traveling in South America from 1849-1863, collecting for Royal Botanic Gardens, Kew.

11 Apr 1857: Lower Pastaza to Andoas (19 Apr-5 May), up the Río Bobonaza to the mouth of the Pucayacu (14 May), Sarayacu (15 May), Pucayacu village, just S of Canelos (21 May-10 Jun), Canelos (12-14 Jun), over land through "Montaña de Canelos" to the Río Puyo (reached 17 Jun) and on to the Río Pastaza (reached 23 Jun), along the banks of the Pastaza to the Ríos Topo, arrival in Baños on July 1.

Almost no phanerogams, numerous cryptogams; BM (1st set), AWH, B, BM, BO, BR, C, CGE, E, F, G, GH, K, LD, LE, MO, NY, OXF, P, S, UC, US, W; the types of Spruce's hepatics are at MANCH.

Notes: Spruce's contribution to Amazonian floristics is unsurpassed. His own account of his journey between Tarapoto and Baños (1908:102-167; 175 seq., 205 seq.) is detailed, with many observations especially on the cryptogamous flora which he considered "the richest on the surface of the globe" and of which he made a large collection. A reconstruction of Spruce's itinerary in Ecuador shows that Spruce collected well over 1500 numbers of phanerogams in Ecuador. However, because of the difficulties experienced during his journey to and from Canelos (cf. introduction, "Chronology of Botanical Exploration") he collected almost no phanerogams in the eastern lowlands.

Publications: Spruce, 1867, 1869, 1884-1885, 1908.

#### STEERE, WILLIAM CAMPBELL

1907-1989; U.S.; Botanist (New York Botanical Garden, New York).

Oct 1984: Napo, ~50 km below Misahuallí, on Río Napo. Nos. ?; NY and duplicate sets.

Notes: Specialist on neotropical mosses. Steere was in Ecuador from July, 1943 until September, 1944 as part of a team searching for *Cinchona* with high quinine content and during that time collected over 1000 numbers of bryophytes. From a typed version of his diaries (deposited in the Archives of The New York



Botanical Garden; copy in the personal library of H. Balslev, Aarhus) it appears that Steere did not reach the eastern lowlands.

Publications: Steere, 1945a-d; 1948a,b.

# STEIN, BRUCE A.

1955- ; U.S.; Botanist (Missouri Botanical Garden, St. Louis, presently at The Nature Conservancy, Washington, D.C.).

Apr 1985: Napo, vicinity of Coca including INIAP station (with D. Neill, J. Zaruma, and W. Palacios).

Nos. 2549-2615; primarily MO, QCA.

May 1985: Zamora-Chinchipe, vicinity of Gualaquiza (with D'Alessandro).

Nos. 2790-2801; primarily MO, QCA.

Jun 1985: Napo, Río Anzu (Río Ansupí), and Misahuallí.

Nos. 3034-3058; primarily MO, QCA.

Notes: Specialist on the genus *Centropogon*.

# Storm, Gunnar Tobias

1929- ; Swedish; Botany student (Dept. of Systematic Botany, Univ. of Göteborg, presently at the Province Board, Göteborg).

Feb-Jun 1968: Napo (with G. HARLING and B. Ström). Itinerary given under HARLING.

# Ström, Bertil

1940- ; Swedish; Botany student (Dept. of Systematic Botany, Univ. of Göteborg, presently at the Province Board, Mariestad, Sweden).

Feb-Jun 1968: Napo (with G. HARLING and G. Storm). Itinerary given under HARLING.

# SUAREZ, G. ALEJANDRO

1948- ; Ecuadorean; Botanical illustrator (free lance).

1978-: Napo, Misahuallí and vicinity.

Species 1-231. (Numbers refer to species illustrated, not to specimens!) Most collections are live plants, some dried specimens are at MO.

Notes: A. Suárez lives in Misahuallí and collects orchids in the vicinity, in an approximate radius of 12 km round his house. His collections include live and dried plants and a number of types of species described by C.H. Dodson and C.L. Luer (cf. *Icones Plantarum*). Suárez has drawn illustrations of orchids for various publications, of ethnobotanical plants for a book to be published by the Museu de Historia Natural of Ecuador, and of trees for a planned field guide by D. Neill and W. Palacios.

# Tan, Kiat

1943- ; U.S., Botanist (Marie Selby Botanical Gardens, Sarasota, Florida, presently Director of the Singapore Botanic Garden).

Jan 1979: Napo, Coca, Auca oil field, Río Napo below Misahuallí (with L. BESSE and J.S. Halton).

Notes: Orchidaceae specialist and former director of the Orchid Identification Center at Selby.

# Tenorio, Guillermo

19??- ; Ecuadorean; Field assistant.

Nov 1982: Morona-Santiago (with T.D. PENNINGTON).

# Thomsen, Karsten

1959- ; Danish; Biology student (Botanical Institute, Aarhus University).

30 Sep-25 Oct 1983: Napo, Añangu (with J. KORNING).

30 Nov 1983: Napo, Laguna Taracoa (with J. KORNING).

1-11 Dec 1983: Napo, Añangu (with J. KORNING).

14-25 Jan 1985: Napo, Añangu (with B. ØLLGAARD and J. Korning).

2 Apr-6 May 1985: Napo, Añangu (with J. Korning).

Notes: Working together with Korning within the SEF project on the composition and structure of different forest types at Añangu.

# VALENCIA, RENATO

1962- ; Ecuadorean; Biologist (Pontificia Univ. Católica, Quito).

9-24 Aug and 24 Sep-14 Oct 1988: Napo, Cuyabeno (with K. Bloch and H. Balslev).

Nos. 67300-68915; AAU, QCA.

Notes: Valencia, Bloch, and Balslev inventoried the trees larger than 5 cm DBH on a hectare.

# VAN ASDALL, WILLARD

1934- ; U.S.; Ethnobotanist (Univ. of Arizona, Tucson, Arizona).

Sep 1981: Napo, Coca to Limoncocha.

Few collections; QCA.

Notes: Researching Indian medicinal plants.

Publications: Van Asdall, 1983.

# VALVERDE BADILLO, FLOR MARIA

19??- ; Ecuadorean; Botanist (living in Guayaquil).

Oct 1978: Napo, Aguarico.

At least one *Miconia*; SEL.

Notes: Valverde is a former student of C.H. Dodson and collaborated on the *Flora of Jauneche*.

# VARGAS, ABELARDO

19??- ; Ecuadorean.

Apr 1983: Napo, (Isla Pompeya).

Few numbers; QCA.

Notes: Vargas collected mainly medicinal plants.

# VICKERS, WILLIAM T.

1942- ; U.S.; Anthropologist and ethnobotanist (Univ. of Florida, Gainesville, presently Florida International Univ.).

1973-1975: Napo, vicinity of Shushufindi (San Pablo), Río Aguarico, Cuyabeno. A map of the collecting sites is included in Vickers and Plowman, 1984.

Nos. 1-273; F, QCA; partial set FLAS.

Notes: Working on the ethnobotany of the Siona/Secoya Indians.

Publications: Vickers, 1976, 1989; Vickers and Plowman, 1984. Further publications resulting from Vickers'

work on the ethnography of the Siona and Secoya are cited in Vickers and Plowman, 1984.

#### VILLAVICENCIO, MANUEL

18??-18??; Italian Jesuit and naturalist specializing in birds and insects; living in Puerto Napo for an unknown number of years.

Fide Bartram (1933), Villavicencio collected 156 mosses near Puerto Napo in 1869. Since Villavicencio collected insects and birds at least from 1847 on (Papavero, 1973:346) it is likely that he made moss collections (and other plant specimens?) over a number of years. His mosses are in the Farlow herbarium.

Publications: Villavicencio, 1858.

#### VILLEGAS, TERESA

19??- ; Ecuadorean; Botany student (Pontificia Univ. Católica, Quito).

Undated: Napo (with Meneses).

Few numbers; QCA.

#### Vivar, Francisco A.

192?- ; Ecuadorean; Ingeniero agrónomo (Director of the Loja herbarium, former student of R. Espinosa).

27 Sep-16 Oct 1975: Morona-Santiago (with E.L. LITTLE, A.T. Ortega, and A. Samaniego).

Itinerary given under LITTLE.

#### WALLIS, GUSTAV

1830-1878; German; Gardener and botanical explorer (working first for M. Linden of Brussels and later for the Veitch Tropical Nurseries in Exeter, Great Britain). 1865-1866 and 1876-1878 in Ecuador, mostly in Loja (Veitch, 1906; Diels, 1937); specimens in K and W.

Notes: The herbarium collections of Wallis, who died in Cuenca, are not numerous because he specialized on living plants and disliked making dried vouchers (Staffeu and Cowan, 1976-1988). In 1876, he collected orchids in Loja and along the Río Zamora (even "extensively" fide Garay, 1978:226), and numbers in the 330s are cited in the *Flora of Ecuador*. One of his botanical discoveries is *Monolena primulaeflora* described from a cultivated specimen at Kew which he discovered on the banks of the river Zamora.

#### WARUSH, AMELIA

19??- ; Ecuadorean.

Sep 1985: Morona-Santiago, Río Cangaime (Kankaim). Nos. ?; NY.

Notes: Collecting under a project with the acronym RBAE.

#### WERFF, HENK VAN DER

1946- ; Dutch; Botanist (Missouri Botanical Garden, St. Louis).

Oct 1971: Morona-Santiago, vicinity of Macuma, at 700 m alt.

64 numbers of ferns (around his nos. 630-666) U, GH.

1989: Pastaza, Cordillera de Cutucú at ~600-1000 m alt. Nos. 10286-10420; MO, QCNE.

Notes: Specialist on neotropical Lauraceae.

#### Werling, Lasse

19??- ; Danish; Biology student (Botanical Institute, Aarhus University, presently a high school teacher in Skanderborg, Denmark).

Aug 1981: Napo (with J. BRANDBYGE, E. Azanza, and S. Leth-Nissen).

Itinerary given under BRANDBYGE.

#### WHITMORE, TIMOTHY CHARLES

1935- ; British; Ecologist (Univ. of Oxford).

Jul-Sep 1960: Napo, 7 km east of Tena (with P.J. GRUBB, J.R. Lloyd, and T.D. Pennington).

Oct 1960: Napo, Hcda Cotapino near Santa Rosa, Bambino (Bimbino?) on Río Pacuno, 10 hrs. west of Napo confluence, and Araki, 10 hrs. west of Coca.

Nos. 709-733; 734-797; 798-887; K, a few in BM, NY, SPN, BMNH.

Publications: Grubb and Whitmore, 1966, 1967; co-author of Grubb et al., 1963.

#### Wibom, Per-Göran

1926- ; Swedish; Botany student (Dept. of Botany, Univ. of Stockholm).

1952-1953: Pastaza, Mera, Puyo; Napo, Tena, Tiputini, Lagarto Cocha (with F. FAGERLIND).

#### WIEHLER, HANS

1930- ; German; Botanist (Marie Selby Botanical Gardens, Sarasota, Florida, presently Director of the Gesneriad Research Foundation, Sarasota, Florida).

Jul-Aug 1971: Pastaza, Mera, Puyo, Canelos; Napo, Tena, Archidona.

Nos. 7144-71108; 71109-71134; SEL, GES.

Apr-May 1979: Pastaza, Mera, Puyo, towards Macas; Napo, Tena, Archidona.

Nos. 79138-79258; 79259-79288; GES, SEL.

Apr 1986: Pastaza, below Mera, Puyo, Canelos; Napo, Tena area (with 10 members of a GRF expedition).

Nos. 8698-86154; 86155-86178; GES, QCNE.

Apr 1988: Morona-Santiago, Macas area, Cordillera de Cutucú, Sucúa, Méndez area, Morona, Limón, Gualaquiza; on to Zamora-Chinchipe, Cordillera del Cóndor (with 7 members of a GRF expedition).

Nos. 8801-88166; GES, QCNE.

Notes: Specialist on neotropical Gesneriaceae.

Publications: Wiehler, 1975, 1977, 1978, 1983, 1984.

#### WIENS, DELBERT

1932- ; US; Botanist (Univ. of Utah, Salt Lake City).

Jan 1965: Napo, Limoncocha, Puerto Napo; Pastaza, vicinity of Puyo, and Mera.

Between nos. 3712-3717 and 3718-3732; UT, LEA, US.

Notes: Specialist on neotropical Loranaceae.

#### Wilbert, Werner

19??- ; U.S.; Anthropologist (working in Venezuela 1986-1989).

21 Jun-10 Jul 1986: Napo, vicinity of Jatun Sacha, near

Misahuallí (with J.S. MILLER).

YOUNG, STEPHEN M.

1952- ; U.S.; Research assistant (grant to T. Soderstrom, National Museum of Natural History, Washington, D.C.; in Ecuador student of L. Holm-Nielsen).

Aug and Sep 1979; Feb and Apr 1980: Napo, Río Yasuní; rd. Zancudo-Tiputini; Morona-Santiago, above 600 m alt.; back to Napo, Misahuallí, Lumbaqui, Limoncocha, and 1 hr. by motor canoe up the Río Indillana.

Nos. 23-25; 26; 66; 102; 107-115; US, QCA, FLAS, and specialist sets, some duplicates at AAU.

Notes: Collected bamboos in Ecuador from July 1979 to June 1980; fieldbook in the grass library at US.

Yost, James

1942- ; U.S.; Anthropologist (Harvard Univ., Cambridge, Massachusetts, and Summer Institute of Linguistics, presently a rancher in Colorado).

1976: Pastaza, upper Tiwaeno River; no collections made.

1981: Pastaza, Quiwado clearing, near the confluence of Ríos Quiwado and Tiwaeno (with E.W. DAVIS).

Notes: Anthropological research on the Waorani Indians.

Publications: Davis and Yost, 1983a-c; co-author of

Arevalo et al., 1976.

ZARUCCHI, JAMES

1952- ; U.S.; Botanist (collections made while a graduate student at Harvard Univ., Cambridge, Massachusetts; presently at the Missouri Botanical Garden, St. Louis).

Aug 1978: Napo, Limoncocha.

Nos. 2351-2379; QCA, GH, US, COL, MO, S.

Notes: Specialist on neotropical Apocynaceae and legumes.

ZARUMA, JORGE

1958- ; Ecuadorean; Ingeniero Forestal (Dirección Nacional Forestal, Ministerio de Agricultura y Ganadería).

Apr 1985: Napo (with B.A. STEIN, D. Neill, and W. Palacios).

1985-1986: Collected in lowland eastern Ecuador mainly in the vicinity of Misahuallí and Coca; but also in Morona-Santiago, Bomboiza, at 800 m alt.; in his own number series or with D. Neill, W. Palacios, and M.A. Baker.

Nos. 1-800; QAME, MO, NY, AAU, QCNE, QCA, and further sets.



## Index to Localities

This index was compiled mostly from herbarium labels and information received from collectors. In January 1989, the Province of Napo was subdivided, with the southern portion retaining the name Napo. The northern part, comprising the Cantones Gonzalo Pizarro, Lago Agrio, Shushufindi, Putumayo, and Sucumbíos, now forms the Province Sucumbíos, with Lago Agrio as its capital. In the list below all Sucumbíos localities are still included under "Napo." Several of the listed localities lie above 600 m altitude but collectors have worked in the environs at lower elevations. I have used the 1979 and 1981 maps of the *Instituto Geográfico Militar*, Quito, scales 1:21,000,000 and 1:1,000,000, respectively, the *Gazetteer of Standard Names for Ecuador* prepared by the US Board on Geographic Names (Office of Geography, Department of the Interior, Washington, D.C., 1957), and the *Ornithological Gazetteer of Ecuador* (Paynter and Traylor, 1977). Unfortunately, there are numerous discrepancies between the gazetteers and both maps. Localities are arranged alphabetically, with Lago, Laguna, Puerto, Río, San, Santa, etc. treated as part of the name.

- Achuntza* Morona-Santiago, 2°07'S, 77°42'W, just N of Macuma
- Ahuano* Napo, 1°04'S, 77°31'W, = Aguano
- Amo 2* Napo, 0°52'S, 76°05'W, oil well of the Conocoto Oil Company
- Amuntai* Pastaza, 2°31'S, 76°48'W, Shuar village
- Añangu* Napo, 0°32'S, 76°26'W, NW corner of the Yasuní National Park
- Apuya* Napo, 6 km from Puerto Napo, between Latas and Santa Rosa
- Arajuno* Pastaza, 1°14'S, 77°42'W
- Araki* Napo, village ca. 10 hrs. upriver from Coca
- Arapicos* Morona-Santiago, 1°51'S, 77°57'W
- Archidona* Napo, 0°55'S, 77°48'W
- Armenia Vieja* Napo, 0°32'S, 77°02'W
- Arosemena Tola* Napo, 1°11'S, 77°51'W, = Zatzayacu, Zarzayacu, Satsayacu, Sarsayacu
- Auca oil fields* Napo, ~40 km due S of Coca
- Aucas, Terr. de los* Napo, the area just S of Coca
- Baeza* Napo, 0°27'S, 77°53'W
- Bomboiza* Morona-Santiago, 3°25'S, 78°35'W
- Caimito* Pastaza, ~1°38'S, 77°36'W, between Sarayacu and Pacayacu
- Campana Cocha* Napo, 1°05'S, 77°30'W
- Canelos* Pastaza, 1°35'S, 77°45'W
- Cañon de los Monos* Napo, 0°20'S, 77°01'W, 15 km N of Coca
- Ceilán* Pastaza, 1°36'S, 75°40'W
- Centro Tuntin Entsa* Morona-Santiago, near Taisha
- Charapillo* Napo, 1°03'S, 75°44'W
- Chiquita* Pastaza, ~0°01'N, 78°13'W, lake and stream above Canelos
- Coca* Napo, 0°28'S, 76°58'W
- Conambo* Pastaza, 1°52'S, 76°47'W
- Concepción* Napo, on the Río Napo, near Hda. Cotapino
- Conejo* Napo, 0°16'N, 76°55'W, also "El Conejo"
- Cordillera del Cóndor* mountain range running more or less N-S in Morona-Santiago and Zamora-Chinchipec
- Cosanga* Napo, 0°34'S, 77°52'W, above 600 m alt.
- Cotapino* Napo, north of Santa Rosa
- Cotundo* Napo, 0°51'S, 77°48'W
- Curaray* Pastaza, 1°25'S, 76°52'W; = Jesús Pitishka
- Cutucú* mountain range in Morona-Santiago at ~2°40'S, 77°51'–78°05'W
- Cuyabeno* Napo, 0°00'S, 76°12'W field station of the Pontificia Universidad Católica on the Río Cuyabeno
- Dayono* Napo, village near Campanacocha
- Dureno* Napo, 0°02'S, 76°42'W, Cantón Lago Agrio
- El Chunchu* Napo, an INIAP station near Payamino, 0°27'S, 77°01'W, 1 km W of Río Payamino, 5 km NW of Coca
- El Conejo* see Conejo
- El Porvenir* Pastaza, ~5 km from Puyopungo
- Garza-Cocha* Napo, ~0°28'S, 75°21'W, lake and village
- Gualaquiza* Morona-Santiago, 3°24'S, 78°33'W
- Guamayacu* Napo, 0°28'S, 76°49'W
- Guayusa* Napo, 0°11'S, 77°4'W
- Hongota* Napo, on Río Misahuallí, 6 km E of Tena
- Huamaní* Napo, Cantón Lago Agrio, near Dureno
- Huasaga* Morona-Santiago, 2°30'S, 77°12'W
- Indanza* Morona-Santiago, 3°04'S, 78°28'W
- Indillana* Pastaza, 1°39'S, 77°53'W, village S of Veracruz at ~900 m alt., locally always called Indillama.
- INIAP station San Carlos*, see San Carlos
- INIAP station Payamino*, "El Chunchu" 0°27'S, 77°01'W, 1 km W of Río Payamino, 5 km NW of Coca
- Jatuncocha* Napo, on the Río Yasuní, 1°00'S, 75°28'W
- Jatun Sacha* Napo, 1°04'S, 77°36'W, Biological Reserve and

field station near Misahuallí

*Jesús Pitishka* see Curaray

*Lagarto Cocha* Napo, ~0°39'S, 75°16'W, on Río Lagarto-cocha

*Lago Agrio* Napo, 0°08'N, 76°50'W

*Laguna Cañangüeno* Napo, 0°25'S, 76°13'W

*Laguna Jatuncocha* Napo, see Jatuncocha

*Laguna Taracoa* Napo, 1°25'S, 76°47'W

*Laguna Cuyabeno* Napo, ~0°N, 76°15'W, see Río Cuyabeno

*La Joya de los Sachas* Napo, 0°10'S, 76°50'W

*Latas* Napo, 1°02'S, 77°44'W

*Limón* Morona-Santiago, 2°59'S, 78°22'W, = General Plaza

*Limoncocha* Napo, 0°25'S, 76°45'W

*Logroño* Morona-Santiago, 2°37'S, 78°10'W

*Loreto* Napo, 0°38'S, 77°19'W

*Lorocachi* Pastaza, 1°39'S, 76°00'W

*Lumbaqui* Napo, ~0°03'N, 77°18'W

*Macas* Morona-Santiago, 2°19'S, 78°06'W

*Macuma* Morona-Santiago, 2°09'S, 77°42'W, on Río Macuma

*Méndez* Morona-Santiago, 2°43'S, 78°19'W

*Mera* Pastaza, 1°28'S, 78°08'W, above 600 m alt.

*Misahuallí* Napo, 1°02'S, 77°40'W, also "Puerto Misahuallí"

*Montalvo* Pastaza, 2°04'S, 76°58'W

*Morona* Morona-Santiago, 2°50'S, 77°40'W, fluvial port on the Río Morona

*Nalpi* Pastaza, just above Canelos

*Nuevo Rocafuerte* Napo, 0°56'S, 75°24'W

*Pacayacu* Pastaza, 1°38'S, 77°36'W

*Pañacocha* Napo, 0°30'S, 76°05'W

*Pano* Napo, 1°01'S, 77°51'W

*Patuca* Morona-Santiago, 2°45'S, 78°18'W

*Payamino* Napo, 0°30'S, 77°17'W, see San José de Payamino

*Pomona* Pastaza, 1°40'S, 77°55'W

*Pompeya* Napo, ~0°28'N, 76°43'W, Franciscan mission

*Pucayacu* Pastaza, 1°38'S, 77°36'W, see Pacayacu

*Puerto Aguatico* Napo, 0°05'N, 77°W

*Puerto Bolívar* Napo, 0°06'S, 76°10'W

*Puerto El Carmen de Putumayo* Napo, 0°05'N, 75°52'W

*Puerto Misahuallí* see Misahuallí

*Puerto Montúfar* Napo, 0°06'S, 76°00'W

*Puerto Morona* see Morona

*Puerto Napo* Napo, 1°03'S, 77°47'W

*Puerto Quito* Napo, 0°10'N, 79°16'W

*Puerto Rodríguez* Napo, 0°03'S, 75°29'W

*Puerto Ubilla* Pastaza, near Canellos

*Pumpuentza* Morona-Santiago, 2°25'S, 77°20'W

*Puyopungo* Pastaza, 1°40'S, 77°55'W

*Puyo* Pastaza, 1°28'S, 77°59'W, above 600 m alt.

*Quiwdo* Pastaza, 1°30'S, 77°20'W, also spelled "Quiwado"

*Río Aguatico* Napo, 0°59'S, 75°11'W

*Río Aguas Negras* Napo, 0°12'S, 75°56'W

*Río Anzu* Pastaza, ~1°07'S, 77°48'W

*Río Bobonaza* Pastaza, major affluent of the Río Pastaza

*Río Bueno* Napo, ~0°45'S, 77°11'W

*Río Cangaime* Morona-Santiago, collections along this river mostly near Taisha

*Río Capahuari or Capihuari* Pastaza, ~1°44'S, 77°29'W, 12 km N of Sarayacu

*Río Chullana* Pastaza, ~15 km N of Puerto Sarayacu

*Río Coca* Napo, major northern tributary of the Río Napo joining it near Coca

*Río Conambo* Pastaza, about 1°52'S, 76°47'W, collections made near village Conambo

*Río Cononaco* Pastaza, ~1°36'S, 75°40'W

*Río Copataza* Pastaza, 2°07'S, 77°27'W

*Río Curaray* Pastaza, ~1°25'S, 76°52'W

*Río Cuyabeno* Napo, ~0°14'S, 75°56'W

*Río Guambime* Morona-Santiago, 2°23'S, 77°30'W

*Río Güepí* Napo, 0°08'S, 75°39'W

*Río Huambuno* Napo, ~1°00'S, 77°30'W

*Río Huashito* Napo, 0°28'S, 77°02'W

*Río Indillana* Napo, ~0°30'S, 76°35'W, southern tributary of the Río Napo, its mouth just downriver from Pompeya; not to be confused with the village Indillana (locally called Indillama) in Pastaza, south of Veracruz

*Río Ishpingo* Pastaza, tributary of Río Pastaza, its mouth at 2°33'S, 56°45'W

*Río Kankaim* Morona-Santiago, = Río Cangaime

*Río Nalpi* Pastaza, joining the Bobonaza near Canelos

*Río Namangoza* Morona-Santiago, collections made near the village Patuca

*Río Namoyacu* Pastaza, affluent of the Río Curaray, its mouth at 1°24'S, 76°45'W

*Río Napo* Napo, ~3°20'S, 72°40'W

*Río Pacayacu* Pastaza, collections along this river made just S of Canelos

*Río Palora* Morona-Santiago, ~1°51'S, 77°49'W

*Río Panguí* Morona-Santiago, 2°25'S, 77°28'W

*Río Panguientza* Morona-Santiago, 2°23'S, 77°30'W

*Río Pano* Napo, ~6 km NW of Puerto Napo

*Río Pastaza* Pastaza, major tributary of the Río Marañón

*Río Paute* Morona-Santiago, ~2°46'S, 78°16'W

*Río Payamino* Napo, ~0°29'S, 77°17'W

*Río Pucayacu* Pastaza, joins the Río Bobonaza near Montalvo

*Río Pumpuentza* Morona-Santiago, ~2°25'S, 77°20'W

*Río Pushiño* Napo, collections along this river mostly made near Lago Agrio

*Río Putumayo* Napo, 0°05'N, 75°52'W

*Río Quiwado* Pastaza, 1°30-50'S, 77°14-20'W

*Río San Miguel* Napo, major river running W-E at ~0°05'N, border with Colombia

*Río Suno* Napo, 0°42'S, 77°08'W

*Río Tigüino* River at Napo/Pastaza border, ~1°15'S, 76°55'W

*Río Tinguiza* Pastaza, joins the Río Bobonaza SE of Pacayacu

*Río Tivacuno* Napo, ~0°55'S, 76°40'W

*Río Tiwaeno* Pastaza, 1°50'S, 77°14'W

*Río Tutanangosa* Morona-Santiago, collections along this river made near Sucúa  
*Río Tzapino* Pastaza, ~1°14'S, 77°15'W  
*Río Upano* Morona-Santiago, river at ~78°12'W  
*Río Villano* Pastaza, major river at ~1°30'S  
*Río Wai si ayá* Napo, ~0°15'S, 76°21'W  
*Río Yasuní* Napo, ~0°56'S, 75°23'W  
*Río Zupayacu* Pastaza, 1°44'S, 77°29'W, 7 km S of Sarayacu  
*San Carlos* Napo, 0°28'S, 76°54'W  
*San José de Payamino* Napo, 0°30'S, 77°17'W  
*San Miguel* Napo, 0°10'N, 76°33'W, Ecuadorean-Colombian border town  
*San Pablo de los Secoyas* Napo, 0°15'S, 77°21'W  
*Santa Cecilia* Napo, 0°03'N, 76°58'W, on the Río Aguarico  
*Santa Rosa de Sucumbíos* Napo, 0°19'N, 77°05'W  
*Santa Rosa on the Río Napo* Napo, 0°58'S, 77°26'W  
*Santiago* Morona-Santiago, 3°03'S, 78°03'W  
*Sarsayacu* Napo, 1°11'S, 77°51'W, = Zatzayacu, Zarzayacu, Satsayacu, and Arosemena Tola!  
*Shell-Mera* Pastaza, 1°30'S, 78°03'W, = "Pastaza"  
*Shiguacocha* Pastaza, 1°44'S, 77°29'W, 5 km E of Sarayacu  
*Shiramentsa* Morona-Santiago, 2°45'S, 77°35'W  
*Shushufindi* Napo, 0°18'S, 76°25'W

*Sucúa* Morona-Santiago, 2°28'S, 78°10'W  
*Sumino* Napo, on the Río Napo, near Sta. Rosa  
*Taisha* Morona-Santiago, 2°23'S, 77°30'W  
*Tarapoa* Napo, 0°10'S, 76°25'W  
*Tena* Napo, 0°59'S, 77°49'W  
*Teresa Mama* Pastaza, 1°56'S, 77°13'W on the Río Bobonaza, ~35 km SE of Sarayacu  
*Tihuano* Pastaza, 1°14'S, 77°14'W, village on the Río Tihuano  
*Tiputini* Napo, 0°42'S, 75°32'W  
*Tiwaeno* Pastaza, 1°50'S, 77°14'W  
*Tolín* Pastaza, above Canelos  
*Toñampari* Pastaza, ~1°50'S, 77°14'W, Waorani village  
*Tukupi* Morona-Santiago, 2°40'S, 77°30'W  
*Tzapino* Pastaza, ~1°14'S, 77°15'W, Waorani village  
*Veracruz* Pastaza, 1°37'S, 77°51'W  
*Yasuní National Park* Napo, collections mainly in the NW corner at ~0°52'S, 76°05'W  
*Yuca* Napo, ~0°31'S, 76°58'W, oil field  
*Yuralpa* Napo, 0°55'S, 77°19'W, on the Río Napo  
*Zatzayacu* Napo, 1°11'S, 77°51'W, = Zarzayacu, Satsayacu, Sarsayacu, and Arosemena Tola



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